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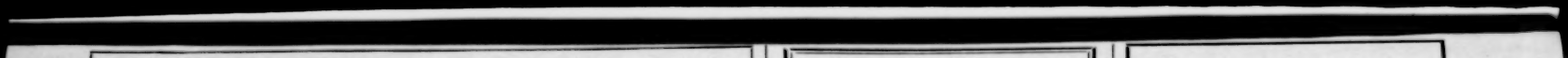

The Journal of Nervous and Mental Disease

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A STUDY OF CHLORPROMAZINE[1]: METHODOLOGY AND RESULTS WITH CHRONIC SEMI-DISTURBED SCHIZOPHRENICS[2,3]

ROBERT A. HALL, M.D., AND DOROTHY J. DUNLAP, PH.D.

INTRODUCTION

It is always difficult to evaluate a new medical treatment. This is especially true in a field which deals with such complex and subtle variables as does psychiatry. In many studies which are intended to evaluate the effect of a given procedure or drug, we see failure to consider adequately the natural history of the pathological condition being treated, the effects of concomitant treatments, the suggestive influence that a new therapeutic attempt may have on the patients, and the observer's unwitting bias, as well as other, undefined influences. The long history in medicine of "cures" that have failed to stand the test of time should alert us to these problems. Sydenham[4] is attributed with giving the advice, when asked by a young physician about a new cure, that the doctor should use it with many patients while it still worked! The antidote or preventative to being misled by the vagaries of uncontrolled variables lies in well-controlled clinical studies. The importance of controls in clinical studies has been discussed by Hall (7) and others (3, 17).

Chlorpromazine as a form of treatment for the mentally ill has been in clinical use for about three years. Already we see claims made for the drug that are many, varied and, at times, enthusiastic as well as contradictory. For example, it is said that chlorpromazine "... may well represent a new era in the treatment of serious mental disorders" (10). On the one hand, it is said to have "... a specific effect on the basic schizophrenic mechanism" (13), but to another worker, "... the relief afforded ... appears to be principally symptomatic ... in no case was the content of the psychosis changed..." (4). Such statements would seem to highlight the need, now and for some time to come, to have adequately-controlled clinical research with this drug.

The present study was initiated with two objectives: 1) to provide assessable, controlled, reproducible data regarding the effects of chlorpromazine upon a sample of a fairly well-defined, reasonably homogeneous and clinically important group of mental patients; 2) to study the problems of experimental design presented in the course of setting up double-blind[5] controls with this and similar drugs. A major difficulty to be anticipated in the latter regard is the question of whether the (desired) principal effect with respect to which subjects and observers should be "blind" will be consistently associated with a toxic or side effect that will reveal the situation. Where this complication prevails, it is probably not possible to do a truly blind study with a "blank" placebo. However, it may be possible in some cases to surmount this obstacle by using a "positive" placebo (12). The latter would consist of some drug which produces the otherwise "give-away" side effect but which is inert in regard to the therapeutic effects.

[1] Kindly supplied as "Thorazine" by Smith, Kline & French Laboratories, who also partially supported this study with a grant for statistical analysis, and provided other assistance.

[2] From the Agnews State Hospital, California Department of Mental Hygiene.

[3] Presented, in part, before the Section on Neurology and Psychiatry at the 85th annual session of the California Medical Association, San Francisco, May 2–5, 1955.

[4] We obtained this choice remark from Dr. Nathan S. Kline. Exact reference was not obtainable.

[5] The term, "double-blind", in regard to placebo-controlled studies implies that neither subjects nor observers know which patients received placebo.

TABLE 1.—AGE OF PATIENTS

Age	Drug Patients	Placebo Patients	Total Sample
20–29	6	6	12
30–39	20	29	49
40–49	34	27	61
50–59	27	26	53

TABLE 2.—DURATION OF HOSPITALIZATION

Number of Years Hospitalized	Drug Patients	Placebo Patients	Total Sample
3 or less	10	9	19
4 to 6	22	15	37
7 or more	55	64	119

The patient group selected for sampling was one which constitutes a very large segment of the state hospital population, namely semi-disturbed, chronic schizophrenic patients. While they do not present agitation that is maximal in intensity, chronicity or anti-social nature, most of these patients can be seen to suffer with anxiety which is less dramatically expressed but which is subjectively experienced no less perhaps than in the very disturbed group.

Though more tractable, these patients would certainly seem to offer fertile ground for therapeutic attack by chlorpromazine. In other words, they present as much thinking and affective disorder, as many delusions and hallucinations as do their more vociferous and unmanageable, but notably less numerous, counterparts. Furthermore, the less pressing nature of their aberrant behavior allows for a more objective climate in which to conduct a dispassionate, controlled study. It follows, of course, that any conclusions drawn from this study should be strictly applied only to the population from which our sample has been drawn.

MATERIALS AND METHOD

This study was conducted on five of the 24 overcrowded and understaffed wards constituting the chronic unit of Agnews State Hospital. Each ward of about 70 patients might be characterized as "intermediate" in regard to the general level of agitation. Some of these patients are able to attend movies, dances, and participate in occupational therapy, most of these activities being on a weekly basis. Spells of agitation requiring seclusion occurred occasionally, and considerable overactive behavior was habitually tolerated by the ward personnel. Of the patients selected for the project, 48% had regular work assignments and 22% of these worked off their ward.

On each of these wards all patients fulfilling the following criteria were assigned to the project: 1) diagnosis of schizophrenic reaction; 2) 59 years or less in age (to eliminate unrecognized organic senile changes); 3) no definite organic pathology, mental retardation or liver disease. All patients having seizures were eliminated except those with onset after lobotomy. As the result of the randomized selection described below, 1) 87 patients received drug, 88 received placebo; of the 54 males, 28 received drug and 26 placebo; of the 121 females, 59 received drug and 62 placebo, and 2) there were no significant differences between drug and control groups regarding age and duration of hospitalization as shown in tables 1 and 2.

Chlorpromazine and identical-appearing placebo were used almost exclusively in oral form as 25 and 50 mg. tablets. Parenteral administration was employed only where patients resisted the oral route. For intramuscular injection each cc. of chlorpromazine containing 25 mg. was diluted with 1.25 cc. of normal saline and 0.25 cc. of 1% procaine. The standardized t.i.d. schedule of 7:00 a.m., 2:00 p.m., and 9:00 p.m. was used. The starting individual dose of 25 mg. was increased every 3 to 10 days in 25 to 50 mg. steps until one of the following was reached: 1) 450 mg. daily without apparent therapeutic response; 2) a plateau of therapeutic response as judged by reports of ward nursing personnel; 3) toxic response which called for discontinuance or reduction of dose (for example, jaundice, extreme weakness or hypotension but not neurotoxicity or rash). One of these events occurred before a daily dose of 600 mg. had been exceeded, and in fact only one patient received more than this amount (750 mg.). Data concerning total dosage are given in table 3. The drug was abruptly terminated at the end of a predetermined period.

It was intended that this be a "double-blind" placebo-controlled study. The drug manufacturer supplied the material in 10 coded batches.

Half of the batches contained drug, and half contained placebo (terra alba), and code letters were assigned at random to these batches. In turn, these code letters were assigned in serial fashion to patients on each ward, thus insuring randomized and unknown assignment of drug and placebo.

Patients entered the project in rotation, according to systematic plan, in such a way that all project patients on each ward were involved within 2 weeks. The project was divided into three periods. At the beginning of the 32-day pre-treatment period all other treatment was stopped, including sedatives and EST. Thereafter, throughout the project any other form of treatment was given only where absolutely necessary, and this was minimal. Home visits were limited to 24-hour periods.

The treatment period lasted from 64 to 66 days. During the first half, regulation of dosage was accomplished in most cases. The three patients who developed jaundice were eliminated from the project.

The post-treatment period was similar in most respects to the pre-treatment period.

In most cases the pre-project ward personnel were used except for a few necessary changes. Whereas only one attendant had been operating some wards on the day shift, two were on duty during the project. The role of the psychiatrists and psychologist was confined exclusively to the chlorpromazine research. The ordinary ward administration was carried out by the regular ward doctor, but the senior author conducted the daily drug management.

Psychiatric technicians were charged with keeping two kinds of records. The first consisted of a daily observation sheet on which entries could be made by all the ward personnel. In addition to columns for recording dosage, temperature, etc., there was a checklist of behavior items. These included: seclusion, tube or spoon feeding, assaultiveness, self-injury, depression, delusions, hallucinations and tension (grade 0 to ++++). The second kind of record was completed only by the ward charge and by the same person throughout. This consisted of a modification of the Fergus Falls Behavior Rating Sheet (11), which was completed every 8 days. Our scale recorded behavior in nine areas as follows: work, response to meals, response to other patients, response to technicians and nurses, occupational and recreational therapy, attention to dress and person, motor activity, speech, toilet behavior. In each area behavior was rated on a quantifiable, five-step continuum from maximum disturbance to "normality".

TABLE 3.—CHLORPROMAZINE DOSAGE

Total Dose in 64–66 Consecutive Days	Number of Patients
gm.	
10.0–14.9	7
15.0–19.9	11
20.0–24.9	39
25.0–29.9	24
30.0–34.9	6

Most of the psychiatric examinations were done by the senior author. Five other psychiatrists of our hospital staff conducted the balance of the examinations. Each patient was evaluated by brief interview, once during the pre-treatment period and once during the second half of the treatment period. Notes on the first examination were kept in standardized form. The form for the second evaluation, hereafter referred to as the Therapeutic Evaluation Form, included a five-step scale as follows:

——(−) Psychosis clearly worse.
——(0) No definite change psychosis
——(+) Slight but definite improvement psychosis (e.g., more comfortable with symptoms and people).
——(++) Moderate to marked improvement (e.g., much more stable, perhaps lost some delusions and hallucinations, more normal thinking and affect.
——(+++) Remission: Essentially free active psychosis (discharge probably possible if current status maintained).

The psychologist asked each patient individually to draw the Bender-Gestalt (2) designs once during the pre-treatment period and once during the last third of the treatment period. This test requires the patient to reproduce nine, relatively simple, abstract designs. It is brief, requires no speech, and seems to be among the least anxiety-arousing tests for patients from a population such as this. During each testing session, the psychologist judged the patient's rate of speech and non-verbal activity. The presence or absence of psychotic

TABLE 4.—PATIENT RESPONSE IN NINE AREAS OF BEHAVIOR AS RATED BY PSYCHIATRIC TECHNICIANS

Behavior Area	Drug or Placebo	Improved	Same	Worse
Work	D	14	63	10
	P	9	73	6
Response to meals	D	27	58	2
	P	18	64	6
Response to other patients	D	22	61	4
	P	25	55	8
Response to techs., nurses	D	25	51	10
	P	24	57	6
Response to occup. and recr. ther.	D	18	58	11
	P	13	61	14
Attention to dress, person	D	9	73	5
	P	6	75	7
Motor activity	D	34	49	4
	P	26	56	6
Speech	D	27	52	8
	P	26	54	8
Toilet behavior	D	25	55	7
	P	15	62	11

speech and psychotic non-verbal behavior during the session was noted, using previously determined criteria. On the second evaluation, the psychologist also interviewed each patient briefly in order to complete the Therapeutic Evaluation Form.

In addition to these various ratings, the participating technicians, psychiatrists and psychologist recorded their judgments as to whether the patient received drug or placebo.

Several non-project psychologists were presented with pairs of pre- and during-treatment Bender-Gestalt protocols obtained from 35 drug and 36 placebo patients. These judges were asked to identify, independently and blindly, the protocol from each pair which was obtained during the treatment period.

Several measures were taken which were intended to serve as precautions and to collect physiological and pathological data of possible significance. These included: daily temperature, weekly pulse, weekly urinalysis for bile, and liver function tests on indication (e.g., fever or biliuria); also, liver biopsies were done on 67 patients, including most who showed increased serum bilirubin or neurotoxicity, and spinal taps were done on 56 patients, including all showing neurotoxicity.

RESULTS

Technicians' observations. The results of the quantified behavioral observations by the charge technicians are given in table 4. We note that in most categories of behavior there are a goodly number of patients who show improvement. However, for most of the nine items there are no statistically significant differences between the patients who received drug and those who received placebo. The items concerning mealtime behavior and toilet behavior (see fig. 1) offer two possible exceptions, but even here the obtained differences between drug and placebo patients are significant only at the 5–10% level of confidence and, in the total statistical analysis, would seem to lose even this much significance (see representation on extreme left of fig. 1).

In the 32 days of the pre-treatment period, the number of days on which hallucinations were noted by technicians was counted. A similar count was made for the last 32 days of the treatment period. The same was done in regard to delusions. Then for each patient was computed the ratio of the number during the last 32 days of treatment to the number during the 32 days of pre-treatment. The results are given in table 5. The difference between drug and placebo is not significant with regard to hallucinations, but it is significant (at 1% level) with regard to delusions.[6]

Evaluations by psychiatrists and psychologists. Figure 2 presents the results of evaluations by the psychiatrists and the psychologist. We note that there is a striking over-all resemblance between the two graphs. Of patients receiving drug, the psychiatrists found 31 (35%) improved, 52 (61%) unchanged, and 3 (4%) worse. Of patients receiving the placebo 16 (18%) were improved, 70 (80%) were unchanged, and 2 (2%) were worse. The equivalent figures for the psychologist were 32 (37%), 48 (55%), and 6 (8%) for the patients receiving drug, and 16 (18%), 68 (77%), and 4 (5%) for the patients receiving placebo. Among the improved patients, moderate to marked

[6] Test used: Kendall's τ equivalent to Wilcoxon's test.

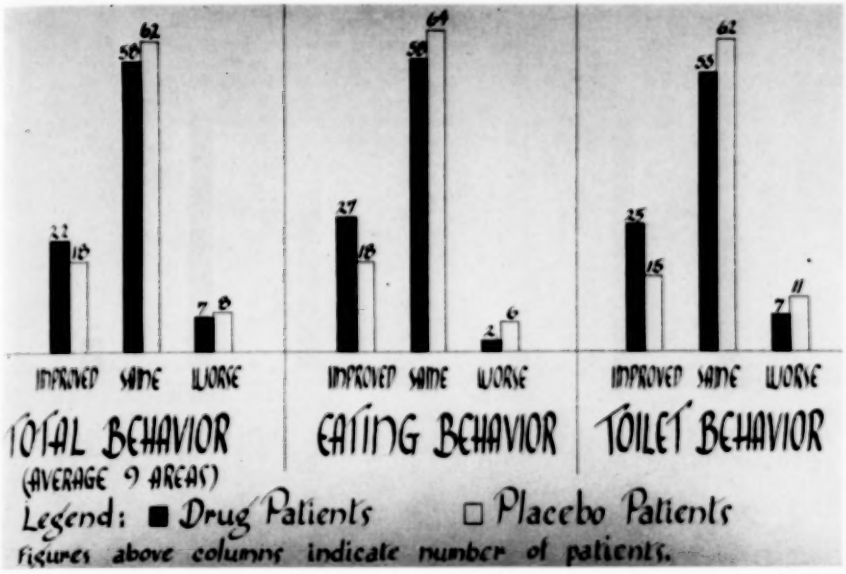

FIG. 1. Changes in technicians' behavior ratings.

improvement was noted in only 7 (8%) of the drug patients by the psychiatrist, and in 2 (2%) by the psychologist. Remission was reported by one observer (psychologist) in only 1 (1%).

Bearing on the interpretation of the above results is the matter of degree of concurrence between psychiatrist and psychologist on individual patients. Table 6 gives the relation of therapeutic response as evaluated by psychiatrists to the same by the psychologist. The table shows a general, positive association, indicating a general degree of agreement. We note that there was agreement on 46 of 86 drug cases, 57 of 87 placebo cases, or 103 (59%) of 173 cases.

Table 7 gives the results of blind judgments of the Bender-Gestalt protocols by the several non-project psychologists. Although these judges agreed well with each other, they were unable to differentiate the drug and placebo patients. This suggests that any effect of the drug failed to manifest itself in the Bender-Gestalt protocols in such a way as to enable these judges to identify the drug patients.

Subgroup analysis. 1. *Diagnosis.* In table 8 the patient sample has been broken into nosological categories, and within each such category are reported the changes of patients on

TABLE 5.—CHANGES IN FREQUENCY OF DAYS ON WHICH DELUSIONS AND HALLUCINATIONS NOTED BY TECHNICIANS

	Median Frequency during Treatment Expressed as Per Cent of Frequency in Pre-treatment Period	
	Drug	Placebo
Hallucinations	0	14
Delusions	62	84

drug and placebo with regard to the nine areas of behavior. Even after finding no difference in the two treatments the data are analyzed to investigate the possibility that the drug exerts its effects on some one type of patient, an effect which would be masked by lumping all together as was done in table 4. Analysis of the data in table 8 indicates that there are four separate items which seem to show statistically significant differences between drug and placebo patients, but two out of the 40 comparisons will appear significant by chance alone. It follows that these four could easily all be fortuitous, and if some one of them is "real"—then which one? The conclusion is that the four nosological groups, analyzed separately, do not demonstrate significant effects of the drug, as

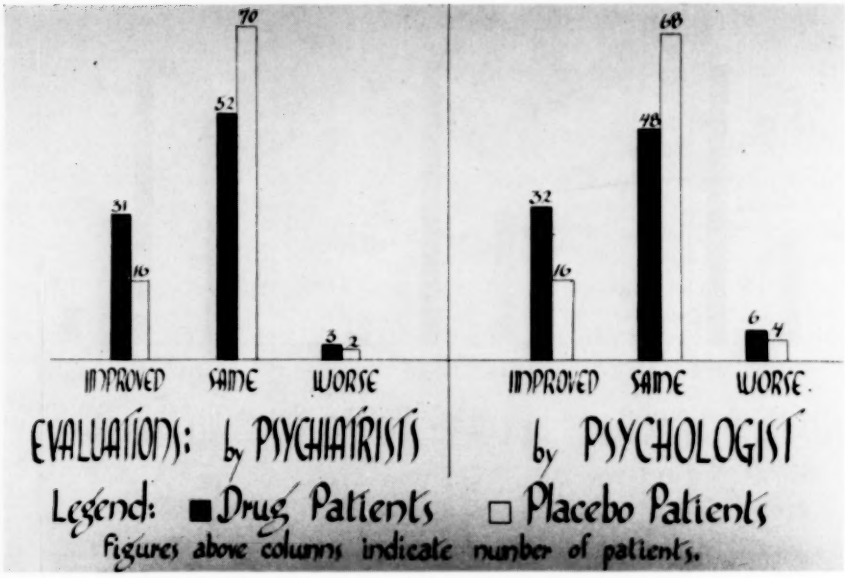

FIG. 2. Evaluation of change in total sample.

TABLE 6.—RELATION OF RESPONSE AS EVALUATED BY PSYCHIATRISTS TO SAME BY PSYCHOLOGIST

A—86 Drug Patients

Psychologist's Evaluations	Psychiatrists' Evaluations				
	Worse	Same	Slight impr.	Moderate to marked impr.	Remission
Remission	0	1	0	0	0
Moderate to marked improvement	0	1	0	1	0
Slight improvement	1	13	9	3	0
Same	1	33	14	3	0
Worse	0	5	1	0	0

One evaluation missing.

B—87 Placebo Patients

Psychologist's Evaluations	Psychiatrist's Evaluations				
	Worse	Same	Slight impr.	Moderate to marked impr.	Remission
Remission	0	0	0	0	0
Moderate to marked improvement	0	0	3	0	0
Slight improvement	0	12	1	0	0
Same	2	53	12	0	0
Worse	0	4	0	0	0

One evaluation missing.

TABLE 7.—PSYCHOLOGISTS' "BLIND" SORTING OF PRE-TREATMENT AND DURING-TREATMENT BENDER-GESTALT PROTOCOLS FROM 71 PATIENTS

During-treatment Protocols Sorted as	Drug Patients	Placebo Patients
Pre-treatment	13	17
During-treatment	22	19

compared with the placebo group, on the nine variables.

Table 9 gives similar analysis of nosological category in regard to evaluation by psychologist and psychiatrists. Possible significance is found in relation to the paranoid group. Here there are differences favoring the drug group in both cases. The difference is significant[7] at the 5% level for the psychologist but not for the psychiatrists. These findings raise a strong presumption of greater response on the part of the paranoids, especially since analysis of the pooled non-paranoids shows no significant differences between drug and placebo groups for either psychiatrists or psychologist. On the other hand, analysis of diagnostic categories, with regard to initial tension, as judged by the psychiatrists, reveals that no significantly greater tension characterized the paranoid or any other subgroup[8] (see table 10).

[7] Kendall's τ test.

[8] Wallis-Krushal analysis of variance by ranks.

TABLE 8.—Relation of Diagnostic Subtype to Patient Response in Nine Areas of Behavior as Rated by Psychiatric Technicians

Behavior Area	Drug or Placebo	Undifferentiated Subtype			Paranoid Subtype			Catatonic Subtype			Hebephrenic Subtype		
		Improved	Same	Worse	Improved	Same	Worse	Improved	Same	Worse	Improved	Same	Worse
Work	D	5	18	1	4	20	5	0	9	2	3	17	2
	P	5	20	1	1	15	3	1	11	1	2	26.	1
Response to meals	D	5	17	2	9	20	0	2	9	0	9	13	0
	P	8	16	2	4	14	1	2	11	0	5	22	2
Response to other patients	D	4	18	2	10	18	1	2	9	0	6	16	0
	P	6	17	3	3	11	5	4	8	1	9	18	2
Response to techs., nurses	D	6	15	3	8	18	3	4	4	3	7	14	1
	P	8	17	1	5	12	2	4	8	1	7	20	2
Response to occup. and recr. ther.	D	5	15	4	7	18	4	1	9	1	4	16	2
	P	4	16	6	4	10	5	2	11	0	4	23	2
Attention to dress, person	D	4	19	1	1	26	2	0	11	0	3	17	2
	P	2	23	1	0	18	1	1	12	0	4	21	4
Motor activity	D	7	16	1	12	15	2	4	7	0	10	11	1
	P	7	17	2	4	14	1	8	5	0	7	19	3
Speech	D	7	13	4	9	17	3	4	7	0	7	14	1
	P	9	17	0	5	9	5	3	9	1	9	18	2
Toilet behavior	D	12	12	0	5	20	4	0	11	0	7	14	1
	P	6	17	3	3	14	2	1	10	2	5	20	4

2. *Sex.* In table 11 the over-all improvement as reflected in judgments of psychiatrists and psychologist is substantially the same for males and females. The apparently greater response for males (table 11, B) does not significantly exceed that for females.

3. *Tension.* The psychiatrist at the pre-treatment interview graded the patient on "tension" on a five-point scale (0, +, ++ +++, ++++) (table 12, fig. 3). It is reasonable to ask, "Do the patients with high pre-treatment tension respond especially well to the drug?" The data for degree of improvement as judged by the psychiatrist or psychologist are shown broken down by pre-treatment tension in table 7, A and B. Inspection suggests that the contrast between drug and placebo is more marked at the higher tension levels than at the lower levels. To examine this question the value of the drug-vs.-placebo coefficient was computed at each tension level for the psychologist's judgments and for the psychiatrists' judgments. The larger such a coefficient is (positively), the greater is the improvement among the drug patients as compared with the placebo patients. The values of these coefficients are displayed in table 13. There it is seen that the coefficient values for the physician increase without reversal, and almost so for the psychologist. This is statistically significant at better than the 5% level in both cases and leads to the conclusion that the drug is more likely to lead to improvement, as judged clinically, where the patients are at a higher initial level of tension of the sort judged by the psychiatrist. This is represented pictorially in figure 3, which analyzes response in the patients rated +++ or ++++ in initial tension.

Side effects. Only brief reference will be made here to side effects since the somatic aspects of

TABLE 9.—Relation of Diagnosis to Patient Response as Evaluated by Psychiatrists and Psychologist

A—Psychiatrists

Diagnostic Subtype	Drug or Placebo	Improved	Same	Worse
Undifferentiated	D	7	16	1
	P	5	21	0
Paranoid	D*	13	16	0
	P	6	11	2
Catatonic	D	4	7	0
	P	1	12	0
Hebephrenic	D	7	13	2
	P	3	26	0

* One evaluation missing.

B—Psychologist

Diagnostic Subtype	Drug or Placebo	Improved	Same	Worse
Undifferentiated	D	7	16	1
	P	6	18	2
Paranoid	D	12	15	2
	P	0	17	2
Catatonic	D	4	6	1
	P	3	10	0
Hebephrenic	D*	8	11	2
	P	6	23	0

* One evaluation missing.

TABLE 10.—Relation of Diagnosis to Pre-treatment Tension Rating by Psychiatrist*

Tension	Diagnostic Subtype				
	Catatonic	Hebephrenic	Undiff.	Paranoid	Simple
++++	2	4	4	8	0
+++	1	12	5	9	1
++	5	7	12	10	0
+	7	14	12	6	0
0	1	2	3	3	0

* Included are only patients on whom pre-treatment tension was rated by the senior author.

this study will be dealt with fully in a separate communication. In general, however, our experience was similar in this respect to that of others (1, 6, 10). Jaundice, for example, occurred in 3 (3%) of patients who received the drug and in none of the placebo patients. The

TABLE 11.—Relation of Sex to Patient Response as Evaluated by Psychiatrists and Psychologist

A—Evaluation by Psychiatrists

Sex	Drug or Placebo	Improved	Same	Worse
Female	D	22	34	2
	P	13	48	1
Male	D	9	18	1
	P	3	22	1

One rating missing.

B—Evaluations by Psychologist

Sex	Drug or Placebo	Improved	Same	Worse
Female	D	18	36	5
	P	13	46	3
Male	D	14	12	1
	P	3	22	1

One rating missing.

notably different finding from that of previous reports was the much higher incidence of neurotoxicity resembling Parkinsonism. This occurred to a detectable though often mild degree in nearly 40% of the cases receiving the drug. The chief significance of this finding in relation to the present report is the fact that these symptoms very frequently disclosed the patients receiving drug.

The question of whether or not favorable psychological results were associated with neurotoxicity was investigated. No significant correlation was found.

Results bearing on methodology. The ward attendants, with one exception, were not blind; their high success rate (nearly perfect) in identifying the drugs used on various patients was a result of using only 10 codes, so that if some one code had several cases showing marked changes (either psychological or physical), the ward attendant could guess that they and all others receiving pills from the same bottle were on chlorpromazine.

The senior author had available various cues from his contacts with ward technicians and patients which he could have conceivably exploited when he made his evaluations of therapeutic response. However, the psychologist did not have any cues except from her observations during the interview with the patient. Never-

theless, the correctness of guessing drug or placebo was remarkably similar, as seen in figure 4. Altogether these data would seem to suggest that the psychiatrists and psychologist were neither completely "blind" nor completely "unblind". There seems no ready method available for evaluating how blind they were.

Case reports

Group I. Drug patients rated improved by both psychiatrists and psychologist:

Case 191: A. R. This 53-year-old married woman was admitted April 4, 1951, for her third hospitalization since 1948. Diagnosis: Schizophrenic reaction, paranoid type. She received a total of 65 EST in three series up to 1952. Pre-treatment examination revealed extreme hostility, haughtiness, paranoid delusions, and rambling and flighty speech under extreme pressure. Rated 4 plus on tension. Lobotomy was being considered.

Total chlorpromazine dosage was 27.400 gm., and she received 600 mg. daily during the second month of treatment, during which time both psychiatrist and psychologist rated her 2 plus (moderately to markedly) improved. Her tension was markedly reduced. Hostility and paranoid ideas had faded. Thinking was more orderly. Her prior hostile attitude toward her family disappeared, and she became interested in going home. The ward technician qualitatively judged her much improved, and this concurred with results of the behavioral rating scale. This patient developed mild neurotoxicity.

Case 194: G. S. This 41-year-old married woman, diagnosed schizophrenic reaction, paranoid type, has been hospitalized since April 15, 1947. She received "milieu" treatment only. Pre-treatment examination disclosed extreme hostility, sarcasm, rapid changes of mood and feeling persecuted by other patients with related auditory hallucinations. Thinking was illogical, and she was rated 4 plus on tension.

This patient received 24.825 gm. of chlorpromazine, the daily dose being 450 mg. after the 17th day. Improvement was rated 2 plus by the psychiatrist and one plus by the psychologist. There was marked reduction of tension, improvement in rapport, and there was more stable and appropriate affect. Paranoid thinking was much reduced. The technicians found her more congenial and cooperative. The latter observations were somewhat confirmed by some improvement in her rating scale. This patient also developed a mild neurotoxicity.

Case 1: M. A. This 59-year-old married man also carried a diagnosis of schizophrenic reaction, paranoid type. His first of three hospitalizations was in 1931, and his present admission was on May 12, 1950. He had received no somatic therapy. On preliminary examination he presented scattered paranoid thinking, religious preoccupation and was quite restless, belligerent and depressive. He evaded discussion of his hallucinations. He was rated 3 plus in tension.

He received 13.575 gm. of chlorpromazine. The dosage varied between 225 and 150 mg. daily during the last half of the treatment. Improvement was rated by the psychiatrist as 2 plus, the psychologist as 1 plus, and the technician noted improvement in behavior. Although the patient stated that he felt better in every way, he complained of depression. He was much more accessible, and affect was more responsive and appropriate. Thinking was less scattered, and he could now speak freely about delusions and hallucinations which, however, seemed actually less bothersome.

Case 214: C. L. This 45-year-old married woman, diagnosed schizophrenic reaction, paranoid type, was

TABLE 12.—Relation of Pre-treatment Tension Rating by Psychiatrist* to Patient Response as Evaluated by Psychiatrists and Psychologist

A—Evaluation by Psychiatrists

Tension Ratings	Drug or Placebo	Improved	Same	Worse
0	D	1	3	1
	P	0	4	0
+	D	4	18	1
	P	2	13	1
++	D	4	9	0
	P	6	14	1
+++	D	4	6	0
	P	3	15	0
++++	D	6	4	0
	P	0	8	0

B—Evaluation by Psychologist

Tension Ratings	Drug or Placebo	Improved	Same	Worse
0	D	0	4	1
	P	0	4	0
+	D	9	12	1
	P	4	12	0
++	D	2	10	1
	P	3	18	0
+++	D	5	5	0
	P	3	15	0
++++	D	6	4	0
	P	2	3	3

* Included are only patients on whom pre-treatment tension was rated by the senior author.

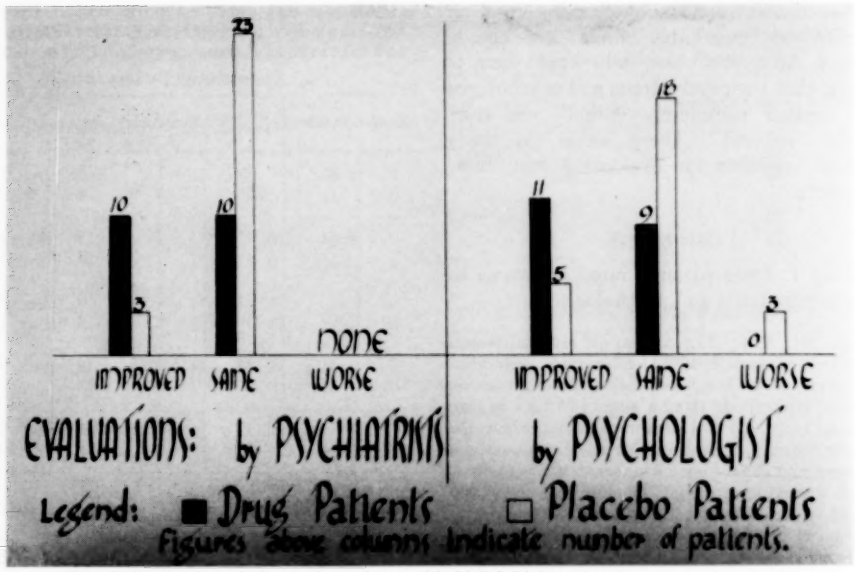

FIG. 3. Evaluation of change in patients with high initial tension (+++ or ++++).

TABLE 13.—VALUE OF DRUG VS. PLACEBO: COEFFICIENT FOR VARIOUS INITIAL TENSION LEVELS

Evaluation	Psychiatrists' Rating of Tension				
	0	+	++	+++	++++
Psychiatrist	0	.074	.077	.27	.60
Psychologist	−.31	.12	−.078	.35	.45

admitted February 26, 1946. She had had 10 EST in 1948. Current psychiatric evaluation revealed a haggard, emotionally flat woman who was very dissociated in her thinking and presented many bizarre paranoid delusions and hallucinations. Her tension was estimated at 1 plus.

She received 25.2000 gm. of chlorpromazine, the dose of 450 mg. daily being maintained after the eighteenth day of treatment. Both the psychiatrist and the psychologist found her to be slightly improved, and the technician's observations indicated a marked behavioral improvement. Thinking and affect were improved, and although she retained the same delusions, they seemed less important to her. This patient developed questionable signs of neurotoxicity.

Case 92: T. M. This 26-year-old single man was admitted March 10, 1949 and diagnosed schizophrenic reaction, catatonic type. He had received 19 EST in 1949. On pre-treatment interview he was actively hallucinating and showed silly, inappropriate and apprehensive affect. He was manneristic and muttered almost continuously and made strange noises. He was graded 4 plus in tension.

He received 28.725 gm. of chlorpromazine, the terminal dosage being 600 mg. daily. Psychiatrist and psychologist concurred in considering him slightly improved. The technician's observation indicated no change. On interview the strange and silly behavior seemed reduced, he was more relaxed and was without pressure of speech. Verbal contact, although improved, was still confined to very brief phrases. Mild signs of neurotoxicity were noted.

Group 11. Drug patients in whom improvement was noted by neither psychiatrist nor psychologist:

Case 97: C. S. This 31-year-old single male had been hospitalized since 1938 with a diagnosis of schizophrenic reaction, hebephrenic type. He had had only milieu treatment. Mental examination revealed a bizarre-appearing, expressionless and suspicious man with gross disorder of thinking and auditory hallucinations. Tension graded 1 plus.

A total of 29.125 gm. of chlorpromazine was given, 600 mg. daily during most of the last month of treatment. None of the observers noted any definite change in psychosis or behavior, except for apparent inability to work. This patient also developed a mild neurotoxicity.

Case 157: C. B. This 56-year-old divorced woman had been hospitalized since 1938 and diagnosed schizophrenic reaction, paranoid type. Pre-treatment examination showed poorly organized paranoid delusions and scattered, pressured speech. Tension was graded 2 plus.

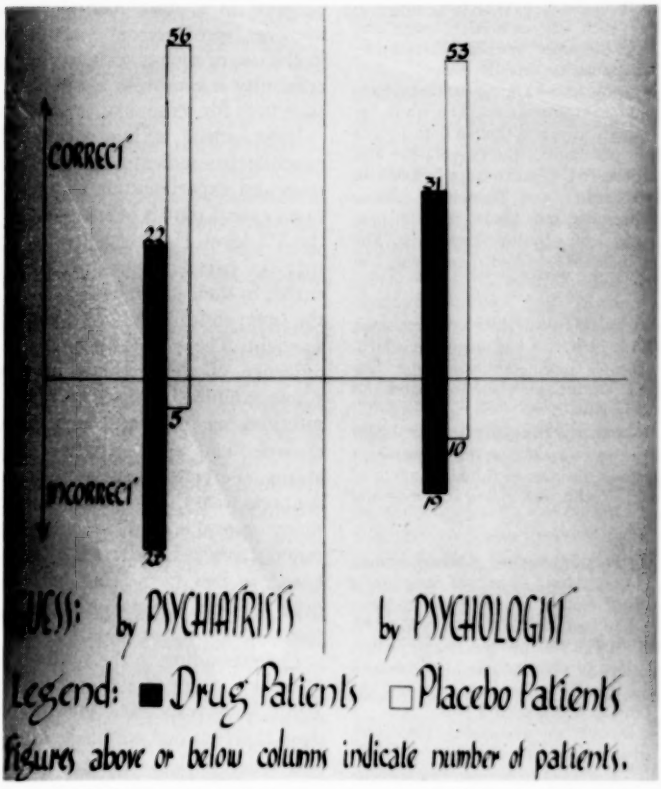

FIG. 4. Test for blindness: correctness of guesses in patients adjudged "no change in psychosis".

A total dose of 24.150 gm. was given, and during the last month she received 450 mg. per day. Neither the psychiatrist nor psychologist noted any definite change in the psychosis, and the technician's impression of improvement was not borne out by the behavior ratings.

Case 81: G. E. This patient, who carried a diagnosis of schizophrenic reaction, paranoid type, had had numerous mental hospitalizations since 1938, the current admission being on July 19, 1951. He had had milieu treatment only. He was a 49-year-old divorced man who presented on initial examination marked hypochondriacal and paranoid delusions of bizarre quality. There were prominent auditory hallucinations, and tension was graded 2 plus.

A total of 25.625 gm. of chlorpromazine was administered, 600 mg. daily being the "plateau" level. While the psychiatrist observed no change, the psychologist strongly felt that the psychosis was clearly worse because of increased depression and disorganized thinking. The observation of the ward technician indicated no definite behavioral change. This patient developed mild neurotoxicity.

Case 171: E. G. This 54-year-old married woman had been continuously hospitalized since 1930 and was diagnosed schizophrenic reaction, paranoid type. She had had 7 EST ending August 30, 1954. Prior to administration of chlorpromazine she presented bizarre, melodramatic behavior, and there were frequent explosions of motor activity as well as delusions and hallucinations. Tension was rated 4 plus.

The total dose was 23.700 gm., and the "plateau level" of chlorpromazine was 450 mg. daily. While the psychiatrist and psychologist found no change, the ward personnel thought she was less noisy and more cooperative, but the behavioral ratings were inconclusive.

Group III. Placebo patients rated improved by both psychiatrist and psychologist:

Case 118: D. J. This 23-year-old single woman was admitted May 3, 1951, and diagnosed schizophrenic reaction, chronic undifferentiated type. She had received a total of 243 EST between May 15, 1951, and June 18, 1954, and transorbital lobotomy on May 13, 1953. Pre-treatment psychiatric interview revealed her

to be inaccessible, incoherent, hyperactive, inappropriate in affect and with disorganized thought and bizarre behavior. On the ward she was over-active, assaultive, and she masturbated openly.

This patient was quite famous among the technicians as a fine response to chlorpromazine. The ward behavior improved dramatically, and though both judged her to be still "very psychotic", the psychiatrist and psychologist both observed a great improvement in rapport, decreased tension and diminished motor activity. The improvement was graded by the psychologist as 2 plus and 1 plus by the psychiatrist. The technicians' ratings indicated marked improvement in behavior.

Case 233: M. S. This 42-year-old married woman was admitted April 14, 1936, and was diagnosed schizophrenic reaction, chronic undifferentiated type. She had received no EST. On interview she was tense and expressed obvious delusions.

Both psychiatrist and psychologist rated her 1 plus improved, and there was reduction in pressure of speech but no change in disorder of thinking, affect or delusions. The ward technician noted no essential change in behavior.

Case 209: N. M. This 34-year-old married woman had been constantly hospitalized since 1945 except for a few months. She was diagnosed schizophrenic reaction, catatonic type. She had had 46 EST between May 14, 1947, and June 18, 1954. The pre-treatment picture was that of an emotionally very flat, timid and fearful woman who showed bizarre motor activity and delusional content. Tension was graded 2 plus.

The psychiatrist thought she was slightly improved, and the psychologist graded her as improved moderately to markedly. The ward technician's impression of improvement was not borne out by the behavioral ratings.

Discussion

In our total sample the drug does not appear to have been effective, as judged by the behavior ratings made by the psychiatric technicians. There appear to be at least two possible interpretations of this result. First, that the drug itself actually produces little change in behavior in this type of patient; secondly, that the drug may produce a change of behavior which is not detected by the rating methods used. It must be pointed out that such behavior scales as the one used here have their limitations and advantages. Scales of this type can be used by ward personnel who have continuous contact with the patients. Reporting of such observations usually can be reproduced with greater accuracy than can more abstract interpretations. Moreover, readily observable behavior is a major criterion determining a patient's progress in a state mental hospital. Ideally, however, ward personnel should have training in the use of such a scale to the point at which reliability is established, but this was not possible here for reasons of practicality.

Independent ratings by psychologist and psychiatrists indicate differences between controls and experimentals which favor the drug to an extent that is of statistical significance at the 5% level. However, it must be pointed out that 1) psychiatrists and psychologist concurred in their judgments no more than 59% of the time; and 2) most improvement was graded as slight. These points seem to reduce the significance of the findings in relation to the whole sample. It might be said that the brief interviewing technique used gives "too thin a cross-section" of a patient's psychological status. Perhaps more continuous, intensive contacts with the patients would have revealed many more subtle psychic features which might have been altered by the drug. However, we feel fairly confident that the more gross aspects of psychosis were assessed adequately.

Corresponding to the findings of Azima and Ogle (1), it appears that our more tense patients have responded more favorably to the drug than has our sample as a whole, while our less tense patients have not responded well. This would tend to support a belief that the action of the drug is primarily sedative and does not affect the "basic psychotic process". The fact that we did not find hallucinations to be affected by the drug would seem to be consistent with such a belief. The behavior ratings by psychiatric technicians did show a significant decrease in delusions, but the impressions of the psychiatrists and psychologist lead us to speculate that patients were simply less pressured by their delusions which nevertheless continued to be found on interview.

Also to be noted is the fact that while the paranoid group was not distinguished by greater tension, it seemed to be the most responsive subtype of schizophrenia. This agrees with the findings of other workers (9, 13, 16). This might seem to suggest again that there may be some factor other than the degree of tension alone which is subject to therapeutic attack by this drug, but we feel this question needs further exploration.

It is to be noted that the oral route was employed in this study. Various modes of administration have been tried by other workers who have conflicting opinions (5, 14, 15). The point might be raised that our less striking results are related to use of the oral route or insufficient dosage. In view of the high percentage of toxic effects seen in our sample, it would seem likely that significant tissue levels were obtained. We would question the net gain to be accrued from pushing dosage beyond 600 mg. in this type of patient.

It has been implied (8) that the effectiveness of this drug will be decreased appreciably when other forms of treatment are not employed concurrently. This may well be so. We did not attempt to evaluate this issue. However, it would seem to require controlled studies specifically aimed at determining definitely whether or not the drug actually contributes to favorable results when used with other therapies.

There are other areas, too, in which our results might be reconciled with the findings from other controlled studies. For example, if it were true that only our most tense patients were comparable to those of Hollister *et al.* (8), then we could understand the discrepancy between the results of the two studies without considering the question of auxiliary therapies.

The study of Goldman (6) reports improvement in 52 (65%) of 81 schizophrenics hospitalized for 5 years or over and treated for more than two months. Though his dosage was apparently higher, and average duration of treatment may have been longer, we wonder if the differences in results are attributable to these factors. Unfortunately, Goldman's preliminary report gives no indication of 1) the degree of tension in his patients, 2) how the control patients were handled, 3) the results in the controls, and 4) whether the double-blind method was attempted. This brings us again to discussion of methodology.

We feel that this study sheds some light on problems of methodology in dealing with evaluation of such a drug. There was a break-down of the double-blind method as a result of 1) errors of experimental design and 2) the revealing nature of side effects. The chief error of design proved to be the method of using a relatively small number of coded batches rather than an individual code for each patient.

The side effects pose the methodological problem which is most difficult to approach. Both the psychiatrists and the psychologist were faced with the fact that "placebo fell short of the ideal" (and unattainable) placebo, which would mimic *all* properties of the drug except its psychological effects. As it was, a patient exhibiting signs of Parkinsonism, for example, could be fairly safely regarded as receiving chlorpromazine, and there would exist an opportunity for distorting the clinical study.

However, the lack of accuracy in guessing drug or placebo by the psychiatrists and psychologist in patients who were adjudged "no change in psychosis" suggests that at many points objectivity must have operated, though the element of possible unconscious bias cannot be considered to have been eliminated from this study. Nevertheless, it should be stressed that consideration of drug patients alone would have led to spuriously impressive results. A look at the amount of improvement amongst the controls reemphasizes the potency of such factors as 1) suggestibility on the part of patients and observers; 2) improvement due to increased attention to patients when a research project is introduced into a ward; 3) the fluctuations, day-by-day and month-by-month in the status of a psychosis (that is, the natural history of the disease); 4) the difficulties of assessing and agreeing on the subtle subjective factors which constitute the evaluation of change in a psychiatric condition. It also points up once again that human beings, chronically psychotic or not, *are* responsive to psychological influences. The improvement in the controls would seem to document the need for more personnel and facilities to bring psychotherapy to state hospital chronic wards.

Summary and Conclusions

1. A controlled study of 175 hospitalized semi-disturbed chronic schizophrenic patients yielded evidence that chlorpromazine was significantly effective (at 5% level) in inducing a slight but definite degree of improvement in psychosis as evaluated by psychiatrists and a psychologist.

2. As compared to the placebo patients, the group of patients receiving the drug showed no

evidence of significantly greater improvement in behavior as rated in nine areas by psychiatric technicians on a modified Fergus Falls Scale.

3. The control patients appeared to improve in 18% of cases as evaluated by psychiatrists and psychologist, and in striking degree in several areas of behavior as rated by technicians.

4. The paranoid subtype showed the greatest response that can be attributed to the drug.

5. The greater was the initial tension, as graded by the psychiatrist, the greater was the response.

6. Though expressions of delusions were significantly reduced, hallucinations were not reduced to a statistically significant extent, and there was no definite evidence that the "basic psychotic process" was altered by the drug.

7. The total findings seem to suggest that the drug has an action that is principally sedative, and that chlorpromazine has little value for non-tense schizophrenics except possibly those within the paranoid subtype.

8. The double-blind method of this study broke down for the most part due to errors of design and the revealing nature of the side effects encountered, especially neurotoxicity (the incidence of which was nearly 40% among our drug patients). The importance of controlled methods, however, is indicated by the significant percentage of placebo patients who improved.

The authors wish to express their appreciation to the many Agnews personnel, especially psychiatric technicians, psychiatrists and psychologists involved, for their whole-hearted participation.

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BILATERAL BREAST PHANTOM AND BREAST PHANTOM PAIN

Case Report

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Introduction

The phenomena of the phantom sensation and phantom pain are extensively discussed in psychiatric, neurologic and surgical literature. The vast majority of the articles deal with phantom limbs, and there is virtually nothing devoted to the phantom breast.

Perusal of the literature for the past 30 years reveals only two articles devoted to a discussion of the phantom breast, and no case was found which was reported in detail. There is *no* case report of phantom breast pain.

This paper is devoted to the presentation of a case of phantom breast and phantom breast pain. The patient was studied extensively, particularly from a dynamic point of view. The discussion is limited to the case. Another paper will be presented to discuss the problem of the phantom breast in general.

Case History

Summary of admission history: The patient was a 36-year-old white female who was admitted to the medical ward at Duke Hospital on April 12, 1955, with the chief complaint of pain in the left chest for three weeks. She gave her present illness at that time beginning seven years ago, in 1948. After 10 weeks of pain, swelling, redness and drainage the patient had her right breast removed and two months later her left breast. (The etiology of the breast disease was not clearly established.) She had occasional chest pain following this, but it was never severe until three weeks ago when she developed severe pain on the left side of her chest. The pain frequently kept her awake at night and to be alleviated required shots on several occasions.

In addition, six weeks prior to her admission to Duke Hospital the patient had a left-sided mastoidectomy, and with this the pain in her left ear, mastoid and temporal region changed to the right side of her head and has occurred intermittently since the time of her surgery. At the time this history was obtained, the patient stated that this operation was her sixth mastoidectomy and that she had been totally deaf in her left ear since the first operation which was performed many years before.

A review of the past Duke Hospital admissions revealed that in 1937 the patient was admitted with abdominal pain, swelling, nausea, vomiting and urinary retention which was relieved by anesthesia, and a diagnosis was made of sympathetic imbalance.

A psychiatric consultation was requested on the morning following her admission because the patient was crying continuously, holding the side of her head and constantly complaining of pain. The medical staff felt that she was psychiatrically disturbed.

After their preliminary work-up a diagnosis of Cushing's disease was being entertained. The physical findings which were pertinent were obesity, abdominal striae, a blood pressure varying from 110 to 150 systolic to 80 to 110 diastolic. Both the left and right eardrums were sclerotic, and there was a bilateral mastectomy scar noted on the patient's chest.

Review of Chronologic History

The patient was born 36 years ago in North Carolina. She attended school until the seventh grade when she was 14. She was the youngest sibling of five girls and three boys. One sibling died prior to the patient's birth. The patient was the *eighth* of *eight* living siblings and the *ninth* of *nine* pregnancies. The *eighth* pregnancy was an abortion, and there were *eight* years between the patient and the previous abortion. (This abortion occurred several months after the birth of the next eldest sibling who was then *eight* years older than the patient.) The patient's mother was 47 when the patient was born.

In describing her early childhood the patient stated that her mother was very strict and

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never wanted her to go out. She thought her mother was "mean". The patient never saw a show until she was 27, and then the show "scared her". She felt that parents should not prevent children from going to shows. She wasn't really sure whether her parents were mean or whether they just wanted her to stay at home. The patient's mother died in 1944 after three or four years of sickness, having had dizziness in her head, nausea and vomiting. To another therapist she described her mother as being "nice, kind, humble and fleshy". To the second therapist she also stated that not having been to a movie until she was 27 made her ashamed of herself. Although the mother was strict with all the children, the patient's next older sister began "slipping out" at the age of 17 or 18.

In describing her father she said that he was tall and slim, not as strict as her mother. He died when the patient was 15 of carcinoma of the stomach. The patient worried because he died and left the family. He was sickly all his life.

In describing her infancy the patient stated, "I was sickly all my life; they laid me out for dead five or six times." Her mother stated that this was because she had measles which went into chickenpox which went into something else which went into diarrhea. When she was two years old her favorite sister got married. When she was 13 the patient began having vomiting spells. Her menarche began at the age of 15. There were nine months between the first and second period, and the patient spontaneously added, "But I wasn't pregnant."

In addition, at the age of *fifteen* the patient's father died. He was very "high-tempered before his death" but not with the patient. Also at the age of *fifteen* the patient began having difficulty with her ear itching. "It felt like something was jabbed in my ear. I'd clean and pick my ears with toothpicks until blood and pus came out." For two years the patient did not see a doctor because she was *ashamed*. She felt that her head was not well inside (displaced menarche fantasies). When she was 17 years old, in April, 1937, the patient had the first operation on her ear and was told that her difficulty "had been done away with." It was approximately the same time that her favorite sister became pregnant. In September, 1937, the patient had the last of *eight* operations on her ear. In October, 1937, the patient had an episode of urinary retention, abdominal pain and swelling which were relieved by anesthesia. Although a diagnosis of sympathetic imbalance was made, it seems more likely that this was pseudocyesis. It was at about this time that her sister was six months' pregnant.

In February, 1938, the patient's sister gave birth. In March, 1938, the patient's sister, who was 38, died three weeks after childbirth. In November, 1938, the patient married her brother-in-law. He was 46 at this time and the patient 18. The patient stated, "He was old enough to be my daddy and he always treats me like a baby." She took over *eight* children, (ages three to *fifteen*), and later she took in a *ninth* child. She was 20 years old at the time she took this child, an illegitimate child of her neighbor. She gave the child back to its "real mother" when the child was *eight* years old. The child was a female. She gave this child back one year before her mastectomy.

The patient described that she was her husband's third wife. He married the patient to have someone to take care of the children and has spent a lot of money on doctors' bills for her and also on food because the patient "eats a lot". On February 3, 1940, the patient had her first abortion. In 1944, when the patient was 25, her mother died.

In 1948, when the patient was 29, she had 10 weeks of pain, draining, swelling and pus without any blood exuding from her breast. She'd rub and put things on it. She didn't want the doctors to see or touch the breast. She was *ashamed of it*. Finally, she went to the doctor and received x-ray treatment; then she developed holes in her breast and later bleeding, and on December 3, 1948, a right mastectomy was performed. The left breast had already started hurting at this time. Immediately following her first mastectomy ***her right ear began to pain her***. On February 18, 1949, the patient had a left mastectomy. At this time her ear began to hurt again and then stopped soon after. (The location and the exact time of occurrence of ear pain were not clear in the patient's mind.)

Since this time the patient has not been able to work, but "her periods became more

regular." About 1949 to 1950 the patient believes to be the time of the onset of her headaches in the temporal region. In 1950 the patient had another abortion, in 1952 a fourth abortion.

Four months prior to admission to the hospital the patient ceased menses and had no further periods until the first day she was in the hospital. She has never enjoyed sex because it "burns like red pepper in there", but this has been much worse in the past four months. Six weeks prior to admission, in February, 1955, the patient had a left mastoidectomy. Her ear stopped hurting at this time. This was her *ninth* ear operation. This occurred 17 to 18 years after her eighth operation. Following this the right ear and mastoid began to hurt. Three weeks prior to admission the patient developed pain in her "left breast". (Needless to say, she has no breast.) Two to three weeks prior to admission the patient's favorite brother died. He had been sick for seven years. She was with him when he died. Her head began hurting at this time.

Description of the Patient

The patient showed a very labile affect, her mood varying from one of sadness with crying, whimpering, moaning and complaints of pain in her head and breast to a happy mood with smiling and laughing. This change in mood usually occurred after the therapist displayed interest in her symptoms and sympathized with how much she had suffered. At times she was friendly and cooperative, talking easily, and at other times she was petulant, angry and reticent, particularly when she felt she was not being given enough attention by the staff. Her behavior could be best described as coquettish with this 250-pound female casting coy, seductive smiles at the therapist. At other times she was quite histrionic, grimacing with a pained expression, closing her eyes with fluttering lids, rolling her head from side to side. At times she would roll around in the bed, put her head in the pillow, whimper and whine. It was also observed that the patient during the day when alone would lie across the middle of her bed with her head hanging over one side and her legs over the other.

During those interviews when she complained of pain, she would press both hands against the side of her head, usually the temporal region, stating this relieved the pain. At other times she would press the breast region or cross her arms across the chest. Often after an interview proceeded 20 or 30 minutes she seemed to forget the pain and pressing the involved areas.

Summary of Interviews with the Patient

The patient described having pain in her breasts ever since they were taken off. The pain she described was the same as the type she had prior to her mastectomy. The pain present would "shoot through her body." Rubbing and pressing or holding the "breast" often relieved the pain. She frequently has the sensation that her breasts are still present, and she feels the operative site just to be sure of this. Sometimes when she would lean forward, it felt as if her breasts were hanging down. At times when her breasts hurt, her head felt as if it was going to burst open, but "this is not painful; it is different from a headache."

The patient also described the feeling that "her head would bust open" just prior to menstruation and of being relieved "as if it drained out" after it started to bleed. This sensation of fullness was, then, associated with her breasts and her head, and was relieved by drainage from her ear, breasts and/or vagina. The association of these organs was further demonstrated when she stated, "After they took my right breast off, the back of my right ear began to hurt and then it stopped but began again after the left breast was removed. For a while the pain in the back of my ear and the breast pain would alternate." When she was asked what she thought caused her trouble, she replied, "I think God must have sent this trouble on me, but I think I've suffered enough. I guess it wasn't for me to have children either. Everyone in my family has them; I guess it's God's will I suffer."

She was quite concerned whether her headaches were due to blood clots like her sister had. This is the older "motherly" sister whose husband the patient married. She wondered further if she had heart trouble like her mother or cancer like her brother.

After a few days in the hospital she remarked that the doctors hadn't looked at her "breasts"

since the first day she arrived and that they had begun to pain her again. She had rubbed them vigorously, and they seemed to be getting red; then she got frightened but was *ashamed* to tell the doctors. She wondered if the doctors could tell she had pain and wondered why they had given her nothing to relieve it.

Diagnosis

The impression of the patient was that she was an immature, demanding and dependent person who manifested a labile affect varying from hostility and petulance to pitiful pleading for help to sadness and then to child-like glee. She was histrionic and dramatic and infantilized all her relations, demonstrating very little object interest with intense self-interest (narcissism). The diagnosis was (1) hysteric personality pattern disturbance with conversion symptoms; (2) phantom breast with phantom pain.

Psychodynamics

The patient's history is replete with evidence of her tremendous, almost insatiable dependency needs which she has never felt were satisfactorily gratified. Her attitude to her mother was ambivalent, i.e., "sweet and nice" in contrast to "mean and strict". She attempted to obtain her needs by passive submission to her mother's wishes. Her inability to express hostility or rebel against domination by her mother is also related to fears of desertion, rejection and probably also a fear of being physically hurt.

Thus the patient became an inadequate, dependent, immature person who constantly sought to relate in an infantile way to some "maternal figure", i.e., mother, father, sister, husband, etc.

One of the mother surrogate figures in the patient's early history was her older sister, and in turn the sister's husband became a "father surrogate". It should again be pointed out that mother and father as well as sister and brother as well as men and women probably all stand for the same thing in this patient at a deep level and that is a mother-giving figure with the male seeming less threatening. This is derived from the fact that the patient's mother was the more restricting punishing one than her father.

There were several occurrences in the patient's life which took place at the same time which seem to bear an interesting relationship to one another, i.e., the father's death when the patient was 15 which closely coincided with the onset of menstruation. It is interesting that the patient's first menstrual period was followed by a nine-months' lapse until her second menstrual period as well as the patient's spontaneous remark, "I wasn't pregnant". Regardless of the etiology of this menstrual irregularity there is at least in her fantasies a connection established between father, menstruation and pregnancy. At the same time the patient had the onset of pruritus in her right ear. When she began to pick at her ear, this represented a masturbatory equivalent. It is obvious that sexuality in this girl has very little actual genital significance but is related to passive receptive needs. However, with the onset of menstruation and genital sexual feelings the patient's passive oral receptive needs were now disguised by sexuality which began to be threatening to this patient because of fear of the mother. The fear is related to the attitude of the patient's mother to sex.

When the patient's sister was in the sixth month of pregnancy, the patient had an episode of "sympathetic imbalance". This was most probably an episode of pseudocyesis which could be considered a conversion symptom which represented (a) the patient's identification with her sister; (b) competition with her sister; (c) the patient's wish to identify with the infant to be born to her sister. The patient's sister died soon after childbirth. This event undoubtedly reinforced the patient's fear of adult femininity and sexuality.

The patient's marriage to her brother-in-law after the sister's death in one sense represents a fulfillment of the patient's fantasy to be in mother's place, i.e., to be married to father and be cared for by him. It does not seem that this situation only represents the fulfillment of the patient's edipal problems but seems more related to the patient's fantasies about the good-giving mother who in fantasy is the father (who also deprived her by leaving). The patient even stated that her brother-in-law was old enough to be her father and depicted him mainly as being good to her as if she were a baby. The idea that the patient was acting

out her fantasy of marriage or union with her own father is further indicated by the fact that the patient's husband had eight children at the time of their marriage. It is to be remembered that the patient's mother (and father) had a total of eight children also.

The patient's guilt and her fears of being punished because of the carrying out of this fantasy wish are revealed by her associating her inability to have children to the fact that she had been picked out from the family to be the one not to have children. In addition, the patient's fear of having cancer like one of her brothers, a clot on her brain like the sister whose husband she married, or a heart condition like her mother also seems to validate this (hostile and expiatory identification).

In regard to the patient's breast disease, it is difficult to know what the primary etiology of the original breast illness was. However, the patient's description of her reaction to the breast illness (which did sound very much like a breast abscess) indicates that much of her later difficulties were factitious in origin in that the patient massaged and rubbed her breast quite vigorously (masturbatory equivalent). There were many factors contributing to self-mutilation of the breast. (1) There was shame about her breast because of the forbidden sexual implications, particularly considering the rigid attitude of her mother. (2) There was guilt associated with her assuming the sexual role and her fear of being punished and inflicting self-punishment. (3) There was hostility toward the mother which was turned back on that part of the patient's body which was certainly most symbolic of the mother, at least for this type of oral individual. (4) Further, forbidden pregnancy fantasies which involved the breast, i.e., the breast equals a pregnancy.

It is interesting that after removal of the patient's breasts her ear difficulties recurred. The patient wondered whether perhaps God had sent the difficulty on her, i.e., impregnated her. (God equals the father.) The patient further relates the relationship of the ears and the breast, at least the mastoid region and the breast, when she describes that mashing on her head behind her ear helps like mashing on her breast did. (In Greek *masta* means breast.)

The breast pain also was related to menstruation. The patient stated that when her breast hurt, her head felt like it would "bust open". She did not describe this as painful, however. This is the same description the patient gives to the feeling in her head just prior to menstruation, and with menstruation her head feels like it is draining and then improves.

Therefore, the breast pain is in part displaced to head pain. Head pain is of two types, (1) the pain in the mastoid region which is relieved by mashing on it; (2) the pain which the patient described as feeling like her head would "bust", this being the same feeling that the patient had prior to menstruation.

The patient's other associations to her menstrual difficulties were ideas of pregnancy. At the same time she also described her ear difficulties such as the pruritus and scratching and picking. One would wonder then if the patient did not have displaced pregnancy fantasies utilizing the ear as the symbol of the vagina, as in a sense sexual and masturbatory impulses were displaced to the ear. The relationship of the ear to sexuality also seems indicated by the patient's description of the ear bleeding and pus coming out, and this giving the patient the feeling that her head was not well inside. This is similar to the patient's description of how her abdomen felt when she was aborting. This is in turn similar to the description of her breasts at the time prior to their removal.

Pain then in this patient to some extent represents a substitute for some desired wish as well as a punishment. These wishes at one level seem to be sexual in nature with fantasies of becoming pregnant by some father figure. At a deeper level this is a much more infantile wish wherein the patient is seeking the omnipotent all good, all giving mother. There is guilt in relationship to her wishes, and many of her actions are self-punitive. She is constantly attempting to repeat the infantile situation, i.e., recreate that time when she was a child and was cared for by her parents when she was not threatened by cultural expectations of adulthood or her own sexual or hostile impulses. In another sense, her constant reliving of the past is an attempt to undo her anxiety and guilt with reference to her hostile wishes, an attempt not only to expiate her "sin" by her constant suffering but also an

attempt to actually gain her desires by finally becoming the mother she wishes to be satisfied by.

One further point to clarify the confusion of the patient's symptoms. When the patient was a child and had ear disease with severe pain, her mother, father and brother put various things in her ear to alleviate the pain and make her more comfortable. The things placed in her ear were milk and apple seed. Several things are occurring here. (1) The memory of pain (somatic pain) is associated with being given care, love and attention. Furthermore, the relief of pain and the gratification of her dependency needs are associated with things being placed in the ear. (2) Milk is symbolic of the desired oral passive receptive needs of the patient. Further, the seeds of the fruit clearly represent pregnancy ideas (adult femininity and sexuality), so the association of sexuality and orality is clearly illustrated.

Summary

A case of phantom breast with phantom pain in an immature, dependent woman is presented. An interesting association of breast, ear and head is noted. The whole interpsychic structure of the patient appeared quite primitive. Her whole conscious life as well as the content of her thoughts seemed to be a continuous primary process without evidence of psychosis.

Several questions arise after reviewing this case. (1) Why is the phantom breast so seldom reported in the literature? Is it (a) a rare phenomenon; (b) that it occurs but women do not report it because of shame or guilt, or they fail to report a phantom because it is not associated with pain; (c) that doctors do not ask patients if a phantom is present? If they do not, why don't they? (2) What factors are responsible for the phenomenon of phantom breast? A second paper has been prepared in which an attempt is made to answer some of these questions.

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BACTERIOLOGICAL STUDIES ON THE ETIOLOGY AND CHLORPROMAZINE TREATMENT OF SCHIZOPHRENIA AND RELATED MENTAL DISORDERS

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In the extended studies on the etiology of diverse diseases, it was found that non-hemolytic or alpha streptococci as isolated from the end point of growth of serial dilution cultures in dextrose brain broth of nasopharyngeal swabbings, of apices of pulpless teeth, and sometimes from the blood of persons having diverse diseases localized electively on intravenous injection in the organ or organs of experimental animals corresponding to those involved in the patient from whom isolated. This occurred in high incidence even in studies of diverse diseases of the nervous system, such as peripheral neuritis, herpes zoster, intercostal neuraligia, dental neuritis and myositis, epidemic and persistent post-operative hiccup, "ether convulsions", epidemic poliomyelitis and encephalitis, Sydenham's Chorea, spasmodic torticollis, respiratory arrhythmia following influenza and epilepsy (1).

In studies on the etiology of schizophrenia, a non-hemolytic streptococcus of low, general virulence was isolated consistently from the end point of growth in serial dilution cultures of dextrose brain broth from nasopharyngeal swabbings and in significant incidence from the blood which localized electively on intravenous injection in the brain of rabbits, monkeys and mice and on intracerebral inoculation produced symptoms simulating those in the respective patients from whom isolated (1). Furthermore, the streptococci, which localized electively in the brain of animals on intravenous injection, were agglutinated, and extracts of antigen of the streptococci were precipitated specifically by the serum of persons ill (2).

Moreover, the euglobulin fraction of the serum of horses that had been immunized with respective specific types of the streptococcus and "thermal antibody" prepared from the streptococci on autoclaving of NaCl solution suspensions for 96 hours were found to elicit a similar immediate erythematous cutaneous reaction at the site of intradermal injection, indicating specific circulating streptococcal antigen. Intradermal injection of the respective streptococcal antigens elicited an immediate erythematous reaction, indicating specific circulating antibody (3, 4, 5).

It is the purpose of this treatise to describe the methods used and to report the results obtained in a further study on the relation of a specific type of non-hemolytic streptococcus to schizophrenia and related mental disorders and the immunological action of chlorpromazine in the treatment of schizophrenia.

Methods

In order to determine the localizing properties of the streptococcus, one ml. of the culture that grew at the end point of growth of serial dilution cultures in dextrose brain broth from nasopharyngeal swabbings, of persons having schizophrenia or related mental conditions, usually at 10^{-6} and sometimes at 10^{-10} was injected routinely into a tail vein of mice. The streptococcus for the preparation of thermal antibody and other studies was isolated either from the end point of growth in the serial dilution cultures of nasopharyngeal swabbings or from the brain of mice etherized 24 hours after intravenous injection of such cultures. The pure culture of the streptococcus from the end point of growth of serial dilution cultures in destrose brain broth was inoculated into either 200 ml. or 3,500 ml. lots of 0.2 per cent dextrose broth prepared from "Difco" peptone and yeast extract. The streptococci that grew in 18 to 24 hours at 35°C. in the smaller lots of dextrose broth were sedimented in a cup centrifuge, and those that grew in gallon lots were harvested in the revolving bowl of a Sharples' supercentrifuge. The streptococci thus obtained were suspended routinely in dense, an estimated 2,000 billion organisms per ml. of chemically pure glycerol, 2 parts, and saturated NaCl solution, 1 part, and stored in the dark at 10°C.

Streptococcal thermal antibody solutions and vaccines were prepared routinely from the streptococci in the dense glycerol saturated NaCl solution suspensions. The vaccine represented suspensions in NaCl solution of 2 billion streptococci per ml. and heated at 70°C. for one hour. Some of the streptococci partially dehydrated in the dense glycerol-NaCl solution suspensions remained viable for months, and antigenic specificity was thus maintained for several years. The highly specific results obtained with vaccines and thermal antibody in cutaneous, agglutinative tests and in animal experiments are attributable in large part to the preservation of viability and antigenic specificity of the streptococci in the dense glycerol- NaCl solution suspensions. Readings of agglutinations were made and recorded as "unknowns".

Streptococcal thermal antibody for cutaneous reactions indicating circulating antigen was prepared by autoclaving suspensions in NaCl solution containing 20 billion streptococci per ml. for 96 hours and diluting the supernatant with an equal volume of NaCl solution (+2 per cent phenol) and injecting approximately 0.03 ml. into the skin of the volar aspect of the forearm. The tests for circulating antibody were made by injecting intradermally .03 ml. of the supernatant of respective streptococci in NaCl solution containing 10 billion per ml. that had been heated at 70°C. for one hour. The diagnostic erythematous reactions if postive occurred almost immediately. The maximal erythema was outlined with pen and ink, and the size of reactions was determined in sq. cm. by matching circles of known sizes on a transparent sheet of cellophane 4 x 6″.

The agglutinative titers of the respective serums, spinal fiuids and urines of persons stricken, shown in the tables, were determined as unknowns and were recorded in per cent. A four plus agglutination at each of four fivefold dilutions of the serum of 1–5 to 1–625 and for streptococcal thermal antibody at four or five tenfold dilutions of 1–10 to 1–10,000, or 1–10 to 1–100,000 at each of the dilution is considered as 100 per cent, a one plus or 1/16 as 6 per cent.

Results of Cutaneous Tests in Schizophrenics Not Receiving Chlorpromazine

Specificity of non-hemolytic or alpha type streptococci as isolated in studies of schizophrenia, epilepsy and arthritis, respectively, is strikingly shown in table 1. It will be seen that the immediate erythematous reaction which followed the intradermal injection of the respective streptococcal thermal antibody solutions was maximal or specific for schizophrenia, epilepsy and arthritis and minimal to comparable injection of streptococcal antibody prepared from streptococci isolated in studies of respiratory infection.

The cutaneous reactions in groups of persons having schizophrenia following the giving

TABLE 1.—Erythematous Cutaneous Reactions to Intradermal Injection of Specific and as a Control of Non-Specific Streptococcal Thermal Antibody in Persons Having Schizophrenia, Epilepsy, Arthritis and Respiratory Infections, Respectively

Diseases	Number Cases Tested	Erythematous Cutaneous Reactions (sq. cm.) to Intradermal Injection of Thermal Antibody Prepared from Streptococci Isolated from Nasopharynx of Persons having Respectively:				
		Schizophrenia		Epilepsy	Arthritis	Respiratory infections
Schizophrenia	148	**9.31** * / 255	8.54 / 150	4.43 / 185	1.84 / 157	4.51 / 41
Epilepsy	58	5.30 / 58		**12.71** / 58	2.40 / 58	2.06 / 58
Arthritis	21	3.63 / 21			**12.14** / 21	4.63 / 21

* The figures above the line represent the average erythematous reactions in sq. cm.; below the line, the number of tests made. Those "boxed" indicate specific; the unboxed, non-specific reactions.

TABLE 2.—CUTANEOUS REACTIONS INDICATING SPECIFIC CIRCULATING STREPTOCOCCAL ANTIGEN BEFORE AND ONE WEEK AFTER THREE WEEKLY INJECTIONS OF VACCINE PREPARED FROM STREPTOCOCCI ISOLATED IN STUDIES OF SCHIZOPHRENIA AND RESPIRATORY INFECTIONS AND OF NaCl SOLUTION AS A CONTROL

Groups Having Schizophrenia That Received Three Weekly Injections of	Number Persons Tested	Time of Skin Tests in Relation to Vaccine Injections	Erythematous Cutaneous Reactions to Intradermal Injection of Thermal Antibody Prepared from Streptococci Isolated in Studies of			
			Schizophrenia		Resp. infection	Well persons
			(7764)*	(6652)	(7643)	(5911)
Vaccine prepared from streptococci isolated in studies of schizophrenia	30	Before	12.18	10.47	4.57	1.77
		One week after 3 weekly injections	7.07	6.02	2.52	0.81
Vaccine prepared from streptococci isolated in studies of resp. infection	30	Before	10.43	10.87	2.88	2.90
		One week after 3 weekly injections	9.22	8.25	1.72	1.29
NaCl solution	30	Before	11.71	10.16	3.05	1.12
		One week after 3 weekly injections	10.45	9.09	3.44	1.27

* Numbers in parentheses indicate strain in this table and in tables 8, 9, 11 and 12.

of subcutaneous injections of specific and nonspecific streptococcal vaccine and of NaCl solution as a control as revealed by immediate erythematous reactions following intradermal injection of thermal antibody before and one week after three weekly immunizing subcutaneous injections of vaccine prepared from streptococci isolated in studies of schizophrenia, respiratory infection and well persons, respectively, are shown in table 2. The reactions to repeat intradermal injections of schizophrenic streptococcal thermal antibody which is taken to indicate circulating schizophrenic streptococcal antigen were maximal before giving schizophrenic streptococcal vaccine, far less following immunization with vaccine prepared from streptococci isolated in studies of schizophrenia, somewhat less following the giving of respiratory streptococcal vaccine, and negligible following comparable injections of NaCl solution. Clinical improvement occurred in significant incidence in persons recieving the vaccine prepared from the homologous streptococci.

THE AGGLUTINATIVE TITER OF THE BLOOD SERUM OF SCHIZOPHRENICS FOR THE STREPTOCOCCUS

Streptococci isolated from the nasopharynx of persons suffering from diverse, especially chronic, diseases of the nervous system are so much alike that a precise classification on the basis of size, staining reactions and cultural characteristics is not possible. However, differentiation has been found readily possible on intravenous injection of rabbits and mice of the freshly isolated strains. The streptococci localized electively in the tissues or organs of injected animals corresponding to the ones affected in the spontaneously occurring diseases (6, 7). Moreover, streptococci that localized electively were agglutinated differentially by the serum of respective persons ill and by thermal antibody prepared from freshly isolated strains of streptococci apparently causative of different diseases (8).

Evidence indicating serologic specificity of streptococci isolated in studies of schizophrenia is strikingly shown in table 3. The agglutinative titer of the serum of persons having schizophrenia was highly specific, being far greater than by serum of well persons; than for morphologically similar non-hemolytic streptococci isolated in studies of epilepsy; than by negligible or no agglutination of streptococci similarly isolated in studies of chronic encephalitis, respiratory infections, hypertension and enteritis.

The results of the agglutinative action of the

TABLE 3.—Agglutinative Titer of the Pooled Blood Serums of Schizophrenics and of Well Persons for Streptococci Isolated Respectively in Studies of Schizophrenia, Epilepsy, Chronic Encephalitis, Respiratory Infections, Hypertension and Enteritis

Streptococci from Nasopharynx of	Number Serums	Agglutinative Titer (Per Cent) of the Pooled Serums at 4 Fivefold Dilutions of 1-5 to 1-625 for Streptococci Isolated Respectively in Studies of					
		Schizophrenia	Epilepsy	Chronic encephalitis	Respiratory infections	Hypertension	Enteritis
Schizophrenics (6 groups)	7	30	13	0	0	0	0
	5	47	6	0	0	6	0
	4	25	13	0	0	0	0
	4	38	6	0	0	19	0
	5	33	13	0	0	0	0
	6	32	12	0	0	0	0
Well persons (2 groups)	7	21	21	0	0	19	0
	8	12	15	0	0	0	0

serum of persons having abnormal mental symptoms, of well non-contact controls for two composite suspensions of streptococci isolated in studies of schizophrenia, and for one composite suspension each of streptococci isolated in studies of respiratory infections and enteritis, respectively, are shown in table 4. The agglutinative titers of the serum of persons having schizophrenia and the respective groups of persons having related mental conditions for two suspensions of streptococci isolated in studies of schizophrenia were comparable and in all instances far greater than the agglutinative titer of the respective serums of well non-contact persons. The agglutinative titer for streptococci isolated from persons having chronic brain syndromes due to syphilis on contact with schizophrenia was far less than in the schizophrenia and other groups. Agglutination by the respective serums of persons having diverse mental conditions, including schizophrenia, for streptococci isolated in studies of respiratory infections approximated one-third to one-half that of the streptococci isolated in studies of schizophrenia, and agglutination of streptococci isolated in studies of enteritis was negligible.

The agglutinative titers of the spinal fluid of persons having schizophrenia and of five other groups having related mental disorders for streptococci isolated in studies of schizophrenia, respiratory infection and well persons are shown in table 5. The average agglutinative titer of the spinal fluids from the five groups of persons having mental disorders not considered as schizophrenia and designated by respective diagnoses was similar to that obtained in the group of 39 persons having schizophrenia, and negligible for streptococci isolated in studies of persons having respiratory infection and of well persons.

The agglutinative titers of A.M. specimens of urine at pH 7.0, respectively, of persons having schizophrenia and of related mentally ill persons, of well contacts and non-contacts for streptococci isolated from persons having schizophrenia are summarized in table 6. The agglutinative titer of the respective urines for streptococci isolated in studies of schizophrenia, other personality disorders, miscellaneous mentally ill, and alcoholic or drug psychotics was far greater than for streptococci similarly isolated from persons having mental syndromes due to hypertension and from well contacts, and was negligible for streptococci isolated from well non-contacts.

In previous studies it was found that nonhemolytic or alpha type streptococci in nature and in the throats of human beings tend to acquire "neurotropic" properties in summer and "pneumotropic" virulence in winter in temperate climates, and seemingly in consequence, epidemics of poliomyelitis and encephalitis occur predominantly in summer and re-

TABLE 4.—AGGLUTINATIVE TITER OF THE BLOOD SERUM OF PERSONS ON ADMISSION TO LONGVIEW HOSPITAL FOR STREPTOCOCCI ISOLATED IN STUDIES OF DIVERSE DISEASES OF THE NERVOUS SYSTEM

Diagnoses	Number Cases or Serums	Agglutinative Titer (Per Cent) at 4 Fivefold Dilutions of 1-5 to 1-625 of the Blood Serum of Persons, Having Diverse Diseases for Streptococci Isolated in Studies of:			
		Schizophrenia		Respiratory infection	Enteritis
Intoxication due to alcohol or other drugs	29	50	43	18	7
Mental disorders considered due to circulatory disturbances	80	43	42	19	4
Convulsive disorders (epilepsy)	5	49	53	29	21
Chronic brain disorders of unknown cause	11	42	43	18	6
Schizophrenia	146	50	48	21	6
Psychoneurotic disorders	6	49	44	27	15
Psychophysiologic autonomic and visceral diseases	49	43	46	20	5
Chronic brain syndromes due to syphilis	27	21	20	14	3
Mental deficiency	21	56	53	17	8
Well, non-contacts	13	14	13	19	7

TABLE 5.—AGGLUTINATIVE TITER OF THE SPINAL FLUID OF PERSONS ON ADMISSION TO LONGVIEW HOSPITAL FOR STREPTOCOCCI ISOLATED IN STUDIES OF DIVERSE DISEASES OF THE NERVOUS SYSTEM

Diagnoses	Number Cases	Agglutinative Titer (Per Cent) at 4 Fivefold Dilutions of 1-5 to 1-625 of Spinal Fluids from Schizophrenia and Related Diseases against Streptococci Isolated in Studies of:			
		Schizophrenia		Respiratory infection	Well persons
Intoxication due to alcohol	6	47	32	0	0
Mental disorders generally considered as due to circulatory disturbances	6	55	34	2	0
Schizophrenia	39	49	33	3	2
Psychophysiologic autonomic and visceral disease	18	48	36	1	0
Mental deficiency	7	54	38	4	2
Other obscure mental disorders	10	55	46	11	2

TABLE 6.—AGGLUTINATIVE TITER AT FIVE TENFOLD DILUTIONS OF 1-10 TO 1-100,000 IN NaCl SOLUTION OF A.M. SPECIMENS OF URINE OF PERSONS HAVING SCHIZOPHRENIA AND RELATED MENTAL DISORDERS, FOR STREPTOCOCCI ISOLATED FROM THE EASOPHARYNX OF PERSONS HAVING SCHIZOPHRENIA

Groups	Number Persons Whose A.M. Specimens of Urine were Tested	Average Per Cent Agglutinative Titer for Streptococci Isolated in Studies of Schizophrenia
Schizophrenia	95	29
Persons having personality disorders	11	26
Miscellaneous mentally ill	33	24
Alcoholic or drug psychotics	11	28
Persons having mental syndromes due to hypertension	13	11
Well contacts	21	10
Well non-contacts	32	1

TABLE 7.—AGGLUTINATIVE TITER OF THE SERUM OF PATIENTS ON ADMISSION TO LONGVIEW HOSPITAL, ACCORDING TO SEASON

Season	Groups	Serums Tested	Agglutinative Titer (Per Cent) at 4 Fivefold Dilutions of 1-5 to 1-625 of the Serum of Persons with Mental Disorders Against Streptococci Isolated Respectively from the Nasopharynx of Persons having:			
			Schizophrenia		Respiratory infection	Enteritis or normal health
Spring	5	49	60	50	17	8
Summer	7	106	43	49	11	4
Autumn	7	84	34	31	15	5
Winter	7	108	57	54	34	8

spiratory infections in winter (9, 10, 11). On the basis of these results, the agglutinative titer of the serum of persons admitted to Longview Hospital was determined according to season. The scope of study and results obtained are shown in table 7. The agglutinative titer of the serum of persons on admission, chiefly schizophrenics, for streptococci isolated in studies of schizophrenia was least pronounced in autumn, slightly higher in summer, and highest in winter and spring. The agglutinative titer of the serum of patients on admission for streptococci isolated in studies of respiratory infection paralleled roughly the

general seasonal incidence of respiratory infections, being least pronounced in summer, somewhat higher in spring and autumn, and highest in winter. Agglutinative titers for streptococci isolated in studies of enteritis and persons in normal health were negligible.

Immunological Studies of Schizophrenia Receiving Chlorpromazine Orally in Treatment

Since chlorpromazine appears to have highly beneficial effects in the treatment of schizophrenia, it was thought that this might be due to its bactericidal action on the streptococcus. Experiments *in vitro* and *in vivo* in mice were performed, and it was found that chlorpromazine had no bactericidal action on the streptococcus isolated in schizophrenia and related mental conditions.

The average size of the erythematous cutaneous reactions to intradermal injection of thermal antibody indicating circulating streptococcal antigen in persons having schizophrenia was comparable in groups of schizophrenics receiving and not receiving chlorpromazine and negligible to injections of antibody prepared from streptococci isolated in studies of arthritis (table 8).

TABLE 8.—Cutaneous Reactions Following Intradermal Injection of Schizophrenic Streptococcal Thermal Antibody in Schizophrenics Receiving and Not Receiving Chlorpromazine Treatment

Schizophrenics	Cases	Average Cutaneous Reaction in sq. cm. to Intradermal Injection of Streptococcal Antibody Indicating Circulating Streptococcal Antigen		
		Schizophrenia		Arthritis
		(9853)	A	
Receiving chlorpromazine	8	7.76	6.75	2.01
	12	10.80	7.30	1.70
	10	8.91	7.07	1.70
	6	9.46	8.22	2.40
	6	7.98	7.20	1.90
Not receiving chlorpromazine	10	8.0	6.47	3.35
	6	9.26	6.91	1.11

The size of the cutaneous reaction indicating circulating schizophrenic streptococcal antigen from the therapeutic use of chlorpromazine and of frenquel is shown in table 9. The titer indicating circulating streptococcal antigen in schizophrenics that received chlorpromazine was only slightly less following two to six weeks of chlorpromazine medication, and patients receiving frenquel, the antigen titer instead was significantly increased. The cutaneous reactions to intradermal injection of respiratory and "normal" streptococcal thermal antibody indicating antigen were moderately increased in persons receiving chlorpromazine or frenquel. Reactions indicating circulating schizophrenic, respiratory and "normal" streptococcal antigen in the control group not receiving medication were comparable on admission and two to six weeks later.

TABLE 9.—Cutaneous Reactions to Intradermal Injection of "Schizophrenic" Streptococcal Thermal Antibody in Relation to the Oral Therapeutic Use of Chlorpromazine and Frenquel in Persons Having Schizophrenia

Groups Having Schizophrenia	Number Patients Studied	Time of Tests in Relation to Admission and Treatment	Erythematous Cutaneous Reactions (sq. cm.) Following Intradermal Injection of Thermal Antibody Prepared from Streptococci Isolated from Nasopharynx of Persons having:			
			Schizophrenia		Respiratory infection	Normal health
			(9702)	(9853)	(9347)	(4110)
Receiving chlorpromazine	27	On admission	9.62	10.20	2.85	2.40
		Two to six weeks later	8.75	9.37	4.56	3.15
Receiving frenquel	8	On admission	6.99	7.18	1.63	1.45
		Two to six weeks later	8.81	10.33	4.07	2.83
Not receiving medication	25	On admission	8.90	10.12	4.44	2.56
		Two to six weeks later	8.22	11.20	4.60	2.54

There was no significant change in repeat tests made two to six weeks later in the control group not receiving medication.

The agglutinative titer of the blood serum of schizophrenics for the streptococcus isolated in studies of schizophrenia (table 10) was found far less in each of three groups of schizophrenics receiving chlorpromazine than in the serum of a comparable group not receiving chlorpromazine. In sharp contrast, the agglutinative titer for the streptococcus in the urine at ph 7.0 of persons receiving chlorpormazine was significantly greater than in the group not receiving chlorpromazine, indicating that the diminished agglutinative titer of the serum in schizophrenics receiving chlorpormazine is due to excessive excretion of antibody in the urine rather than to a diminished synthesis.

TABLE 10.—Agglutinative Titer of the Serum and Urine of Persons Having Schizophrenia for the Streptococcus Isolated in Studies of Schizophrenia in Relation to Chlorpromazine Treatment

Chlorpromazine in Treatment	Cases	Agglutinative Titer of the Serum and Urine in Per Cent at 4 Fivefold Dilutions of 1-5 to 1-625 for the Streptococcus			
		Blood serum after at 47°C. for		Urine after at 47°C. for	
		24 hours	48 hours	24 hours	48 hours
+	6	50	45	53	38
+	6	37	34	44	49
+	6	39	34	—	—
0	6	62	79	34	25

The agglutinative titer (table 11) of the blood serum of schizophrenics receiving and not receiving chlorpromazine for the unwashed streptococci isolated from the nasopharynx of schizophrenics receiving chlorpromazine was slightly less (33 per cent) than by the serum of persons not receiving chlorpromazine (36 per cent) and far less (42, 53, 49, 56 and 56 per cent), respectively, than for corresponding streptococci isolated from schizophrenics not receiving chlorpromazine (75, 75, 88, 88 per cent). The agglutinative titer of the serum of schizophrenics receiving chlorpromazine for streptococci from schizophrenics not receiving chlorpromazine was significantly less, averaging 54 per cent for the streptococcus 9853 and 70 per cent for the streptococcus 616, than by the serum of persons not receiving chlorpromazine, 64 per cent and 75 per cent, respectively. Moreover, the administration of chlorpromazine caused the streptococcus of schizophrenia to become resistant to the agglutinative action of the blood serum of schizophrenics (55 per cent) as compared with the agglutinative titer (79 per cent) of the serum

TABLE 11.—Agglutinative Titer of the Serums of Schizophrenics Receiving and Not Receiving Chlorpromazine for Streptococci Isolated from the Nasopharynx of Persons Having Schizophrenia, Respiratory Infection or Normal Health

Serums from Schizophrenics	Serums Per Pool	Agglutinative Titer (Per Cent) at 4 Fivefold Dilutions of 1-5 to 1-625 of the Blood Serum of Persons Having Schizophrenia for Streptococci Isolated from the Nasopharynx of Persons Having:							
		Schizophrenics					Normal health		
		Receiving chlorpromazine 648		No chlorpromazine		Exhaust culture	Contacts	Non-contacts	Respiratory infection
		Unwashed	Washed in NaCl sol.	(9853)	(616)	(9955)	(542)	(4111)	(9836)
Receiving chlorpromazine	5	33	42	45	70	12	14	0	39
	11		53	65		8	9	0	31
	7		49 (55)*	31 (54)		2	6	6	31
	6		56	59		4	5	0	34
	7		56	63		3	5		38
Not receiving chlorpromazine	5	36	75	66	75	2	6	9	37
	10		75 (79)	63 (64)		2	4	0	38
	5		88	56		0	0	0	31
	4		88	75		4	7	0	50

* Figures in parentheses represent respective group averages in per cent.

TABLE 12.—Agglutinative Titer for Streptococci of the A.M. Specimens of Urine of Schizophrenics Receiving and Not Receiving Chlorpromazine

Groups		Specimens Tested	Average Agglutination (Per Cent) of A.M. Specimens of the Urine of Schizophrenics at 1–10 to 1–100,000 Dilutions for Streptococci Isolated in Studies of			
			Schizophrenia		Respiratory infection	Well persons
			(9853)	(9956)	(9836)	(4110)
Schizophrenics	Receiving chlorpromazine	9	35	40	10	0
		9	35	50	0	0
	Not receiving chlorpromazine	9	20	25	0	0
Control: Well persons remote from schizophrenia		9	0	10	0	0
Schizophrenics, not receiving chlorpromazine		10	25	20	10	0
		10	20	35	15	0
		10	25	15	5	0
Control: Well persons remote from schizophrenics		10	0	0	0	0

for the streptococcus as isolated from persons not receiving chlorpromazine.

The agglutinative titer of the serum of persons receiving and not receiving chlorpromazine for streptococci isolated in studies of schizophrenia after passage through three exhaust cultures in dextrose broth (9955), for streptococci from contact persons in normal health (542), and well non-contacts (4111) was minimal and not differential. The titer for streptococci isolated in studies of respiratory infection (9836) ranged from one-half to two-fold less than that for strains of streptococci isolated in studies of schizophrenia.

Experiments on the agglutinative titer of A. M specimens of urine brought to pH 7.0 of schizophrenics receiving and not receiving chlorpromazine for streptococci isolated in studies of schizophrenia, respiratory infections and well persons are summarized in table 12. The agglutinative titer of the urine at pH 7.0 from schizophrenics for streptococci isolated in studies of schizophrenia was significantly higher, indicating excretion of antibody in both of two groups of persons receiving chlorpromazine, than in comparable groups of schizophrenics not receiving chlorpromazine. Agglutination by the A. M. urine of well persons remote from schizophrenics for streptococci isolated in studies of schizophrepia and by the A. M. urine of schizophrenics for streptococci isolated in studies of respiratory infection and well persons was negligible.

The results of the agglutinative titer of the serum of schizophrenics on admission to the hospital and two to six weeks later, for streptococci isolated in studies of schizophrenia, respiratory infection and in two groups of well persons not receiving medication, in three comparable groups receiving chlorpromazine and one group receiving serpasil are shown graphically in chart 1. The agglutinative titer for streptococci isolated in studies of schizophrenia in the two groups not receiving medication increased moderately during the two to six weeks period, whereas the agglutinative titer in the three groups receiving chlorpromazine and one group receiving serpasil decreased markedly. The agglutinative titer of the serum of persons having schizophrenia for streptococci isolated in studies of respiratory infection not receiving medication did not change while in the three groups receiving chlorpromazine and the one group receiving serpasil, there was a moderate decrease in the agglutinative titer for streptococci isolated in studies of respiratory infection.

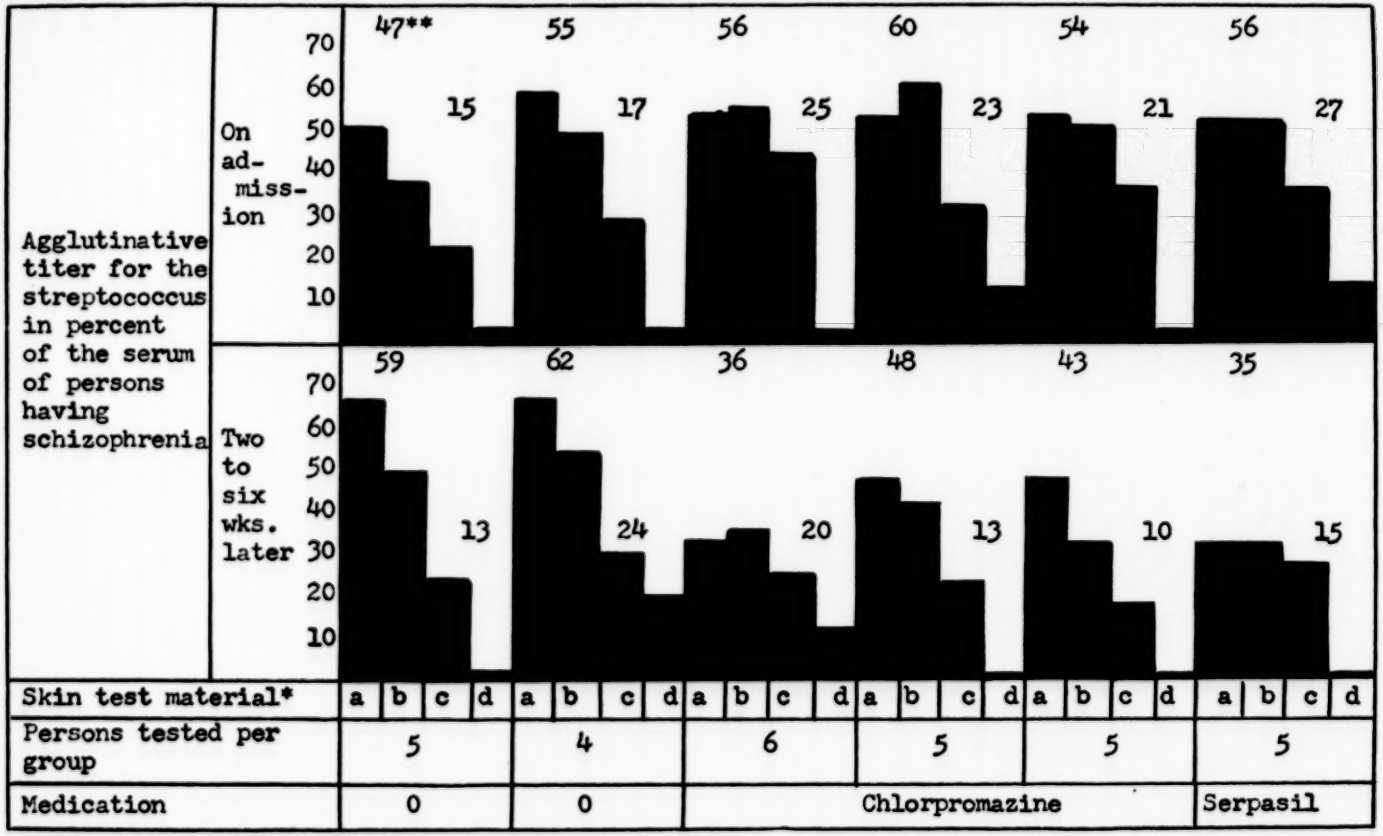
Summary and Conclusions

Erythematous cutaneous reactions to intradermal injection of thermal antibody solutions prepared from streptococci, as isolated in studies of schizophrenia, indicating specific circulating streptococcal antigen, have been found highly specific (table 1), and they diminish in size on repeat tests as symptoms abate during immunization with homologous streptococcal vaccine (table 2).

The non-hemolytic or alpha type streptococcus isolated from the end point of growth of nasopharyngeal swabbings of serial dilution cultures in dextrose brain broth and some-

CHART 1

Agglutinative titer of the serum of persons having schizophrenia, on admission and two to six weeks later, against the streptococci isolated in studies of schizophrenia (a and b), respiratory infections (c), and well persons (d) in relation to the therapeutic use of chlorpromazine and serpasil.


Agglutinative titer for the streptococcus in percent of the serum of persons having schizophrenia
On admission
Two to six wks. later
70
60
50
40
30
20
10
47** 15 55 17 56 25 60 23 54 21 56 27
59 13 62 24 36 20 48 13 43 10 35 15
Skin test material* a b c d a b c d a b c d a b c d a b c d a b c d
Persons tested per group 5 4 6 5 5 5
Medication 0 0 Chlorpromazine Serpasil

*Thermal antibody solutions prepared from streptococci isolated in studies of schizophrenia, a and b; respiratory infection, c; and well persons, d.

**Per cent total agglutination.

times from the blood in schizophrenia was agglutinated specifically in far higher titer by the blood serum, spinal fluid and urine of persons having schizophrenia or related mental disorders than by the blood serum of well schizophrenic contacts and of persons having mental syndromes due to hypertension (tables 3, 4, 5, 6).

The agglutinative titer of the serum of persons having schizophrenia for the streptococcus isolated from the nasopharynx of schizophrenics did not change seasonally. In sharp contrast, agglutination by the serum of schizophrenics of streptococci isolated in studies of respiratory infection varied seasonally and was maximal in winter months in accord with the general prevalence of respiratory infections (table 7).

The results of previous bacteriological and immunological studies on the etiology of schizophrenia and related mental disorders (1, 2, 3, 4) have been corroborated and extended in this further study, indicating that these conditions are due to a specific type of non-hemolytic, neurotropic streptococcal infection or intoxication.

The question remains obscure as to the source of the specific type of neurotropic, toxicogenic streptococcus of schizophrenia whether from extraneous sources, such as milk, water, or air, from contact infection or whether through inherited or inherent conditions in persons stricken which supply the very conditions on which the streptococci normally present in the nasopharynx or other foci of infection in human beings acquire specific neurotropic properties.

The streptococcus of schizophrenia has a low, general virulence but is highly neurotropic in that it localizes electively in the brain of persons stricken and in animals on intravenous injection. In keeping with this low, general virulence, the general health is maintained, and stimulation of the formation of antibody is minimal; hence the disease process tends to continue unabated.

The administration of chlorpromazine in chemically effective dosage has little or no effect on the size of the cutaneous reactions to intradermal injection of streptococcal thermal antibody indicating specific circulating antigen while in persons receiving frenquel, such reactions are significantly increased (tables 8 and 9).

The agglutinative titer for the streptococcus of the blood serum of schizophrenics receiving chlorpromazine unfortunately has been found far lower and of the urine significantly greater than in comparable schizophrenics not receiving chlorpromazine (tables 10 and 11).

The agglutinative titer of the urine indicating excretion of streptococcal antibody in persons receiving chlorpromazine was far greater than in comparable groups not receiving chlorpromazine and than in well persons remote from schizophrenia (table 12).

The administration of chlorpromazine and serpasil in the treatment of schizophrenics was found to cause a reduction instead of a hoped for increase in the agglutinative titer of the serum of schizophrenics for the streptococcus isolated in studies of schizophrenia (chart 1). The serum of persons receiving such medication had no demonstrable bactericidal action.

The favorable clinical effects from the administration of chlorpromazine in the treatment of schizophrenia and related mental disorders as observed in hospital wards while sometimes truly remarkable are sometimes associated with the occurrence of symptoms resembling Parkinson's disease and leukemia.

It was hoped that the striking beneficial clinical effects might be shown to be due to the elimination of the underlying cause, the toxicogenic neurotropic streptococcus (1, 2, 3, 4) rather than to the sedative or tranquilizing action of this new drug chlorpromazine, but this was not realized. In fact, from the immunological standpoint, it is contraindicated, for it does not eliminate the basic cause, the specific neurotropic streptococcus, nor does it neutralize the specific toxicogenic streptococcal antigen. Further attempts to combat schizophrenia and related mental conditions specifically with streptococcal vaccine and thermal antibody are contemplated, and results obtained will be reported in due course.

It is realized how contrary to current psychiatric tenets the concept that schizophrenia and related mental disorders can possibly be due to an infectious process, but the results of bacteriological studies by the special methods used indicate that such is nevertheless the case.

Grateful acknowledgment for the cooperation of Dr. Earl A. Baber, Superintendent, and the Medical Staff of Longview Hospital is hereby made.

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SUICIDAL RESPONSES ON THE RORSCHACH TEST: A VALIDATION STUDY

Protocols of Suicidal Mental Hospital Patients Compared with Those of Non-Suicidal Patients

GEORGE A. SAKHEIM

Since suicide is a major cause of death among psychiatric patients (6), the practical significance to the clinician of any psychological technique which is able to predict suicidal behavior cannot be overestimated.

Thus if certain Rorschach responses or response patterns could be demonstrated to bear high predictive relationships to suicidal tendencies, patients diagnosed as suicidal, by means of the Rorschach, could be treated with attention focused on the alleviation of their hostilities, anxieties, guilt feelings, and resulting depressive moods (10, 12, 18, 30). While undergoing therapy, such patients could be observed carefully by their therapists and families for any overt manifestations of their self-destructive impulses, and they could be protected from them. Confirmed, hospitalized suicidal patients could be retained on a closed ward and not be granted ground privileges. Some needless suicides could thus be prevented. At the time of their consideration for release by a hospital staff, suspected suicidal patients could be given a Rorschach examination to help determine whether they still constitute suicidal risks. This would help to prevent the premature discharge of actively suicidal patients. In short, if suicide could be predicted from the Rorschach in individual cases, valuable human lives might be preserved.

In clinics and mental hospitals the "emphasis in prediction is on the understanding and the management of psychopathology" (29, p. 253). The clinician tries to predict the probable course of a disturbance. "Prediction may aim at events which lie ahead in time, that is in the objective future" (29, p. 253). Thus we may predict that a person showing a suicidal patterning of personality traits on the Rorschach at this time is likely to commit suicide when confronted with serious adjustment difficulties or stressful life situations after he leaves the hospital. According to Wyatt, "Prediction can be made on the basis of the Rorschach test by relating a certain profile of Rorschach scores to a specific incident of adjustment .... As prediction tests the relationship between two sets of facts, the ability to predict behavior becomes but another term for the validity of the relationships propounded. Consequently, correlation has come to be almost synonymous with prediction" (29, pp. 253–254). Thus the rationale of the present study is that if certain Rorschach signs, categories, and configurations can be proved to be highly correlated with an objective criterion such as known instances of suicidal behavior, then these same Rorschach factors may be used subsequently to infer or predict suicidal behavior from the records of new cases.

Frankly molecular in design, the present study attempts "to investigate the validity of single Rorschach variables or combinations of them against certain aspects of the subject's behavior" (22, pp. 131–132). It is in keeping with Beck's recommendation that "the Rorschach investigator must ... subject his separate factors to the necessary controls so that he will be able to solidify the scientific foundations of the test" (1, p. 103).

Description of the Signs, Patterns, and Configurations Investigated

In the Rorschach literature, a number of investigators have proposed certain signs, configurations or even the content of specific responses as prognostic of suicidal tendencies (2, 21, 17, 13, 14, 19, 20, and 28). These signs, patterns, and configurations which are examined for their validity in this present study were selected on the basis of earlier validating studies, personality theory, and clinical experience with the test. They are described in detail in the writings of Beck (2), Rabin (21), Lindner (17), Hertz (13, 14), Piotrowski (19), Pratt (20), and White and Schreiber (28) but will be summarized below.

For a detailed exposition of the ten suicidal

configurations compiled by Hertz, the reader is referred to her original article (13, pp. 4–23). For purposes of this study, Hertz's summary of them is given.

Deep anxiety is indicated where there is evidence of reaction to or preoccupation with the shading elements of the blots and/or where shading shock is manifest.

Active conflict and deep inner struggle may be inferred from repression of color, color shock, repressed or disguised human movement, a combination of *M* flexor and *M* extensor, or blocked and frozen *M*, inanimate movement, midline details, unbalanced *W:M*, space forms, *P* failure, content indicating awareness of conflict or symbolic of unconscious conflict, preoccupation with symmetry and general concentration on the spatial characteristics of the blots.

Neurotic structure includes especially patterns involving shading and color, reduced *R*, low *M*, failure and rejection trends, low *%F*, overvalent material in content, and behavior pointing to insecurity and strain.

Depressed states are manifested especially by failure and/or rejection trends, low productivity, slow or retarded reaction time, impaired mental approach, high *F*, low *M* and *C*, constrictive *Erlebnistypus*, narrow content, behavior manifestations of sadness, anxiety, and dejection.

Ideational symptomatology refers to content which reflects peculiar, eccentric thinking, fixed ideas, phobias, obsessions, compulsions and delusions, especially where content is dysphoric and depressed in nature. Pathological content frequently includes evidence of special bodily preoccupation, sex fears, homosexual fantasies, ideas of insufficiency and incompleteness, castration anxiety, ideas of persecution, of influence and of reference, abnormal religious absorption, delusions of sin and guilt, morbid fatalistic ideas, and the like. This configuration includes not only the content itself but the formal Rorschach characteristics with which it is associated. The extent to which content is different and peculiar (*O*−), the extent to which it is personal (personal *F*−), the degree to which it is affect-dictated (Color) or tinged with anxiety (Shading) or associated with autistic activity (*M*−) reflect ideational symptomatology.

Withdrawal from the world is inferred especially from lack of feeling tone, retarded reaction time, no *FC*, many *F*−*'s*, low *% OB*, few *H*, spaces used as holes, *O*−, low *P* (14, pp. 47–48).

Constriction is inferred from high *%F*, low *M* and *C*, constricted *Erlebnistypus*, overemphasized control elements, overemphasis of *Dr's*, high *P*, low *O*, narrow content, evasive and non-committal behavior.

Sudden and/or inappropriate emotional outbursts refer to sudden, spasmodic and unexpected color in a record.

Resignation trends may be seen in behavior which reflects utter listlessness, indifference, inertia, a "what's-the-use" attitude, in flexor *M*, many *Ch* patterns, low *C*, no spaces, and narrow sterile content.

Agitation is inferred from overweighting of *Dr*, low *M* and *C*, few shading combinations, poor form, low *A*, many space forms, low *P*, high *O*−, much perseveration, repetition of ideas, self reference, and especially behavior which reveals restlessness and agitation (14, pp. 47–48).

In his analysis of the Rorschach protocol of a suicide, Beck emphasized that "An oppressive anxiety, strenuous inner conflict projected in a neurotic structure of compulsive form, and much mulling over, both in the unconscious fantasy and in the conscious intellectualization of deeply personal life experiences—when all this emerges in an individual of most superior intelligence . . . the pattern is always ominous with the threat of suicide" (2, p. 326). He also commented on the high incidence of *Y* (dark) shock on card IV.

An inspection of the suicidal pattern described by Beck (2) reveals considerable overlapping with Hertz's configurations. Therefore, for purposes of this study, it was broken up into its constituent parts, and several of these were equated with the corresponding configurations of Hertz. Beck's "oppressive anxiety" was equated with Hertz's "marked anxiety." His "strenuous inner conflict" was equated with Hertz's "active conflict." His "neurotic structure" was considered as the equivalent of Hertz's configuration by the same name.

"Much mulling over both in the unconscious fantasy and in the conscious intellectualization of deeply personal life experiences" (2) was equated with a high number of human movement responses, four or more to be exact.

This figure was arrived at by regarding as high any number of *M* responses greater than the mean number of *M* of Beck's Spiegel group which we used as our normal control group (4). The sign $M > 3$ was given the brief designation of active fantasy to summarize the meaning of the *M* symbol when found in a record in above average quantities.

"Most superior intelligence" also mentioned by Beck (2) as part of his suicidal pattern was determined from the subjects' Wechsler-Bellevue I.Q. (27), rather than from the Rorschach.

The presence of *V* or dark shock on card IV is considered by Beck to signify, "a low threshold sensitivity to events bearing potency of danger" (2, p. 40). Piotrowski believes that dark shock on plate IV represents "a fear of repressed aggressive impulses" (19, p. 76). Hertz regards it as an indication of ". . . oppressive anxiety which overwhelms the individual, weakens him, disorganizes him, and prevents efficient functions" (13, p. 8).

Color shock on cards II, IX, and VIII is generally interpreted as an indication of some neurotic element in the patient's personality make-up (2, 5, 19). It is a frequent sign of an emotional disturbance characterized by a strong fear of other people. Piotrowski considers its appearance as ". . . a valid sign of neurotic anxiety, i.e. of an unconscious and automatic partial suppression of feelings, of being anxious whenever a genuine and stronger emotion presses for outward manifestation, and of an uncontrollable fear of spontaneity" (19, p. 68).

Using the Rorschach, Rabin (21) made a longitudinal study of a psychotic individual who attempted suicide after first murdering his wife. Based on this study, Rabin hypothesized that, "A combination of color and shading shock should be considered by the examiner as an ominous warning of the two facets of aggression—homicide and suicide" (21, p. 522).

Intensive individual case studies of suicidal persons as that of Holzberg et al (15) and that of Ulett, Martin, and McBride (26) contribute much to our deeper understanding of the suicidal personality which is obscured in group studies. They further point up the important fact that, "The study of overt clinical behavior and the use of tests that tap surface aspects of personality reveal only one portion of total behavior" (15, p. 347), whereas projective techniques are able to penetrate deeper and reveal something of the dynamics of the psychopathological process at work.

Among 43 responses in the content category isolated by Lindner, certain responses given to card IV as a whole are pertinent to our investigation. Lindner asserts that, "The 'suicide' card is an apt name for card IV. Responses containing such projections as 'a decaying tooth', 'a rotted tree trunk', 'a pall of black smoke', 'something rotten', 'a burned and charred piece of wood', appear in severe depressive states with suicidal overtones and self-annihilative thought content" (17, p. 83).

In his discussion of the significance of the *c'* (dark shading) response, Piotrowski states, "Numerous *c'* with a very inferior *F*+%, many *W*, and powerful sum *C* may point to suicidal tendencies: in such a case the aggressive activity is turned against the individual himself" (19, p. 73).

The dark shading responses, *c'* and *Fc'*, are considered by Piotrowski as high if their sum exceeds three points in a record (19, p. 76). Since it was soon discovered that a sum *c'* of more than three points placed the cut-off score so high that few subjects from either the suicide or the control group would be included, an alternate critical score of sum *c'* equalling two or more points was used to attempt to discriminate between the two groups. "Both *c'* and *Fc'* are indications of a distinct tendency to intermittent depressive moods" (19, p. 73). People giving numerous *c'* and *Fc'* responses respond to anxiety with an intensification of motor activity. When anxious they tend to become aggressive. They have a low tolerance for frustration, and anxiety soon drives them to overt activity.

The designation of "very inferior *F*+%" was reserved by the writer for *F*+ percentages below 70. Beck (4) found the mean *F*+% of his normal group to be 79.25 per cent with a S.D. of 10.20. It, therefore, seemed reasonable to consider any *F*+% falling beyond −1 S.D. as low. *F*+% is here regarded as a measure of an individual's rational "conscious control over his thought processes" (19, p. 77). It is an indicator of the strength or stability of the ego (2) and, as such, should be a deciding factor in determining whether a person disposed to suicide will be able to hold

on and, by exercising sufficient intellectual control, suppress his self-destructive impulses.

W found in excess of 30 per cent in a record was considered a fair test of Piotrowski's hypothesis that many *W* are typical of suicidal records (19). The normal group showed a mean *W* percentage of 19.81 with an S.D. of 11.10 per cent (4). Percentages were used rather than the absolute number of *W's* in order to control for the fact that records differed in length. The number of *W* in a record may be taken to represent several significant personality variables such as "the quality and intensity of the drive for difficult achievement" (19, p. 43), the degree of abstract intelligence, and planning and organizing ability.

When the *CF* and *C* responses together exceed the *FC* responses, the subject is said to be emotionally labile (24). He is self-centered, immature, dependent, and demanding. In him impulsive emotionality predominates over emotional control and healthy adaptation to the requirements of society (2, 16, 19).

As part of her validation study of intropunitive and extrapunitive signs on the Rorschach test, based upon the records of suicidal and homocidal subjects, Pratt (20) compared 12 of her most suicidal records with 12 less serious suicidal records and 12 homicidal records. She summarized her findings regarding the suicidal cases as follows, "The typical serious suicidal patient of this population was an individual of above average I.Q., whose Rorschach protocol showed a high number of responses, extratensive experience balance, emotional instability (high *CF*), inability to relate to others affectively (low *FC*), inability to appraise himself objectively (low *V*), marked dysphoria and anxiety (high *Y*), and aggressive trends (high *S*). His maladjustments were more likely to be expressed in significant content than by rejecting the cards" (20, p. iv–v).

Since the mean number of responses, found by Beck *et al.* (4) in their normal group, was 32.65, and Pratt's (20) serious suicidal records yielded a high number of responses, any protocol showing 33 or more responses was considered to demonstrate this sign. A high number of responses is a measure of zeal and productivity.

Extratensive experience balance refers to the relationship between *M* and the sum of all the color scores. Subjects showing $M <$ sum *C* are supposedly characterized by an unstable emotional life, greater responsiveness and better adaptation to the environment, restless, labile motility, and more extensive and superficial than intensive interpersonal relationships (24, pp. 76–79).

High *CF* denotes emotional instability. It was decided to define the number of *CF* as high when three or more occurred in a record. The mean number of *CF* in the normal group was 1.44, with a probable error of 1.19 (4).

Inability to relate to others affectively is indicated by low *FC*. The mean number of *FC* for the Spiegel sample (4) was 1.36. It was, therefore, decided to use a cut-off score of one or less *FC* per record as a sign of low *FC*. Low *FC* indicates a deficiency on the part of the subject in his ability to sympathize with others and to enter into emotional rapport with them (2).

Inability to appraise oneself objectively is indicated by a low number of vista responses. Since the mean number of vista responses found in the normal group was 1.84 with an S.D. of 2.05 (4), only the complete absence of vista responses from a record could be considered as "low". Beck believes that realistic "self-appraisal appears always to be the psychologic activity that emerges in vista" (2, p. 33).

Marked dysphoria and anxiety, high *Y*, was equated with Piotrowski's high *c'* and treated as one and the same scoring category. Beck states that, ". . . disquieting, oppressive affect . . . essentially always accompanies *Y*, as the emotional tone" (2, p. 35).

A high number of *S* responses has been interpreted to signify aggressive trends (20). The white space responses are said to disclose such personality dispositions as stubbornness, negativism, and resistance to the environment. "Rorschach said that the *S* measured an habitual oppositional tendency which the subject can turn against himself as well as against his environment" (19, p. 47). Since the mean number of *S* responses found by Beck in the normal group (4) was 1.90, three or more *S* were considered to meet the criterion of "high *S*".

Hertz (13), Pratt (20), and White and Schreiber (28) have attached considerable diagnostic importance to the morbid content of the responses given by their suicidal groups.

Content mentioning blood, mutilation, anatomy, snow, death, decay, violence, storm clouds, restlessness, etc., indicates this morbid mood. White and Schreiber have compiled a useful table of these and similar responses (28, pp. 184–189). In observing their recommendation, at least several such concepts had to occur in a record before it was credited with showing a "morbid mood".

A high number of popular responses reveals an overemphasis on conventionality. Pratt (20) raised the question of the degree of conformity of the suicidal group when compared with the controls. The possibility was considered that the suicides, supposedly less capable of expressing their aggression outwardly for fear of departing from socially acceptable behavior, would give a higher number of populars than the controls who did not necessarily share this fear. Since the normal group (4) gave a mean number of populars of 6.79, any record yielding seven or more *P* was considered as showing this sign.

White and Schreiber conceive of the *F%* as a controlling mechanism ". . . that tells how well the personality can govern the delicate relation between energies and feelings. . . . The combined presence of high *M* and high *F%* (40%–60% roughly) . . . is the best insurance . . . against suicide" (28, pp. 173–177). Assuming good form level, the higher the *F%*, the better the ego control. An *F%* of less than 40 per cent was, therefore, considered a sign of low control.

To White and Schreiber the presence of pure color responses in a record is a warning sign that the patient has the necessary impulsive potential to carry out the suicidal act. Schafer (25) also found pure *C*, usually blood responses on cards II or III, to be typical of his neurotic and psychotic depressive group. He regards it as a sign of their pent-up aggressiveness. Therefore, the relative presence of pure *C* in the two groups was investigated.

White and Schreiber also believe that the presence of *FM* in a suicidal setting is a bad sign because it shows that the patient has enough physical energy to mobilize his resources for suicide (28). Hence the two groups were compared with regard to the presence of *FM* in their records.

Certain additional signs were included in this study by the writer on the basis of his personal experience with suicidal records and because he wished to test certain psychoanalytic hypotheses. The analytic position regarding the etiology of suicide is ably summarized by Zilboorg who writes, "Every suicidal person is the victim of strong (unconscious) aggressive impulses which he fails to express outwardly and which he, as a result, turns inward, i.e. on his own self" (30, p. 272). According to the psychoanalysts, the potentially suicidal personality shows exceptionally strong, unconscious hostile impulses. The Rorschach counterparts of strong hostile impulses may be seen in the projection of hostile humans or aggressive animals into the inkblots. They may also be found in the excessive utilization of the white spaces, in responses to black, in a shock reaction to plate IV, in the use of pure color as a determinant and in several other signs and patterns such as aggressive content, explosion responses, etc. If the suicidal group were to show significantly higher numbers of these indicators than the controls, this would lend support to the analytic hypothesis that the suicidal personality harbors intense aggressive impulses. If they did not, it would tend to weaken the tenability of this contention.

Examples of hostile human movement responses are, "two witches fighting" on plate II, and "a man hanging" on card V. Inasmuch as the *M* reflect strongly felt wishes or powerful fears, they represent fantasy projections of some of the most basic needs of the personality (2, 19). Hostile *M* may show the presence of strong aggressions in the subject. This hostility may be projected onto others and result in a fear of being harmed by others.

Piotrowski observes that a person's animal movement responses directly influence his behavior when he is in a state of diminished consciousness or weakened self-control, such as is brought about by alcoholic intoxication, sudden anxiety, or fatigue. He believes that, "If the *FM* are aggressive, the individual tends to commit his aggressive actions only in a state of diminished consciousness. . . . and not when in full control of his powers" (19, p. 61). One might well expect a high number of aggressive animal responses from the suicidal group, especially since, according to Klopfer, "They

represent the influence of the most instinctive layers within the personality" (16, p. 278).

In his exposition of *M* in which animals behave like humans, Piotrowski proposes the interesting hypothesis that individuals who give such responses are disillusioned idealists. "Many adults of this type develop an attitude of mild cynicism and opportunism. The largest share of this type of response is produced by people predisposed to prolonged depressed moods" (19, p. 54).

The presence of inanimate movement responses is regarded by Klopfer (16) as a sign of inner tension and anxiety. "*m's* appear where the subject experiences his promptings from within as hostile and uncontrollable forces working upon him rather than as sources of energy at his disposal" (16, p. 279).

Color white responses are rather rare responses in which the white spaces are interpreted as white color. For example, the inner white space on plate II or VII might be called "a white globe; it looks lit because of the color." Piotrowski interprets these responses as indicating ". . . intermittent ecstatic moods of which the individual is clearly conscious" (19, p. 71). He found this type of a response to occur in a person who had very recently overcome a depression, who had "found a plan for positive action which will in his opinion solve successfully the problems that frustrated him and brought about the depression he has surmounted" (19, p. 71). It would be interesting to learn whether subjects who had decided to solve their conflicts and put an end to their depression by resorting to suicide would give a higher number of these responses than their controls.

Hypotheses

The purpose of the present investigation is to examine the validity of the diagnostic signs, patterns, and configurations which have been advanced in the literature as indicators of suicide. The hypotheses under consideration may be summarized in this way: the 37 variables discussed above, both singly and in combinations, are characteristic of suicidal records and will, therefore, occur with a significantly greater frequency in the Rorschach records of suicidal mental hospital patients than in those of non-suicidal patients.

Procedure

The Rorschach protocols of 40 suicidal hospitalized psychiatric patients were compared with those of a matched group of non-suicidal patients. A patient was considered suicidal only if he had made a serious, overt attempt on his life. For 10 patients who were tested prior to their attempt, the average time interval between the date of testing and the suicide or suicide attempt was six months. For 30 patients tested after they had made a suicide attempt, the average interval between this attempt and the time of testing was two months. In most instances, these attempts led to injuries requiring hospitalization. In some cases the attempts occurred in the hospital. Of the 40 subjects, seven actually succeeded in taking their lives. The remainder were saved from certain death only because of the premature and accidental discovery of their act and the prompt intervention by relatives, neighbors, the police or hospital personnel. The commission of an overt suicidal act was the relevant objective or outside criterion against which the different Rorschach categories and patterns were validated. In order to eliminate all cases of suicidal gestures, the sincerity of each attempt was verified from the clinical history or from police reports. In a few doubtful cases the senior psychiatrist in charge of the service made the decision as to whether the patient's suicide attempt was bona fide, i.e., whether he really wanted to die. All doubtful cases were dropped from the study.

A control group of 40 non-suicidal psychiatric patients was selected from the hospital's files and matched with the experimental group for sex, age, educational level, and general intelligence. The intellectual level of each subject was determined by means of the Wechsler-Bellevue Intelligence Scale (27).

The distribution of these subjects according to age, sex, educational level and general intelligence was as follows: There were 12 men and 28 women in each of the two groups. The mean educational level for both groups was 10 years of formal schooling. The mean chronological age of the suicide group was 33 years, with ages ranging from 16–59. The average age of the control group was 35 with a range from 14–58.

The 40 suicides had a mean Wechsler-

Bellevue Full Scale I.Q. of 105.5 with I.Q.'s ranging from 79–141, while the 40 non-suicides showed a mean I.Q. of 106.7 with a range from 81–136. Thus the composition of the two groups was almost identical with respect to age, sex, educational level and general intelligence.

According to their social histories, none of the controls had ever attempted suicide although a few had, at times, expressed suicidal ideas, as do a good many normal people (23). None of the subjects in the experimental group had received electric shock or insulin therapy during the interval between the suicidal attempt and the time of testing. None of the controls had received any such treatment for a period of at least one year prior to testing. In order to eliminate the possible confounding effects of structural brain damage, all patients suffering from organic brain diseases, epilepsy, arteriosclerosis, senile dementia, or mental deficiency were excluded. Thus the control group, like the experimental group, was composed entirely of functionally disordered cases.

The distribution of our suicide and control groups, according to their final staff diagnoses, was as follows: The suicide group contained 16 schizophrenics, 13 psychoneurotics, five manic-depressives, two patients suffering from involutional psychotic reaction, one paranoid reaction, two sociopathic personality disturbances, and one case of acute brain syndrome with alcoholic intoxication. The control group was composed of 20 schizophrenics, seven psychoneurotics, five manic-depressives, two cases of paranoid reaction, and six sociopaths. As may be seen from the preceding distribution, it was possible to equate the two groups for clinical diagnoses only approximately. Although it would have been a desirable refinement of the study to equate for diagnosis, this proved to be a practical impossibility. It would have required many more subjects than were available to the writer.

The Rorschach protocols and case histories were drawn from the files of the Augusta State Hospital. All protocols were scored or re-scored by the writer using Piotrowski's scoring system (19) with certain minor modifications. For the purpose of covering a wider range of personality factors in this study, certain pertinent symbols from Beck's scoring system (3) were added. For example, Beck's location category, *F*+ tables, popular responses and content categories were used. The writer made liberal use of the norms provided by Beck *et al.* (4) in order to help determine where to set his various cut-off scores. These norms originated from a large group of healthy adults who had never become psychiatric casualties. In this study they were used to provide the expected frequency of occurrence in the normal population of certain scoring symbols, ratios, and categories.

In determining whether or not any one of Hertz's configurations was present in a record, her procedure (13) was followed, with one exception. After completing the description of her configurations, Hertz made the significant point that although her configurations were objectively defined, the final determination of whether or not a configuration was present in a record "depends upon the subjective estimate of the interpreter, which in turn is influenced by his skill, training and intuitive sense" (13, p. 24). It is regrettable that nowhere in her paper does Hertz specify how many of the factors or patterns comprising any one of her configurations need to be present in order for her to conclude that the whole configuration should be recorded as present in the record. In a subsequent paper, she states that, "In identifying a configuration, it must be emphasized, not all patterns listed had to appear in a record. The examiner had to determine from the entire picture whether or not there was sufficient evidence to conclude that a specific configuration should be recorded" (14, p. 48). For a study which aims at the quantification of data this is a shortcoming which definitely handicaps any investigator who is trying to replicate her procedure. It must be noted that some of Hertz's configurations are composed of as many as 17 or 19 component patterns. In order to clarify his own procedure and to have a constant frame of reference, the writer adopted the following guiding rule of thumb. To credit a configuration with being present in a record, it seemed reasonable to require that at least one-half of all the component factors or patterns listed under it had to be there, or, as a minimum, the one-third of the factors comprising the most valid patterns associated with that configuration had to be unquestionably present.

Since the writer was using a different scoring

system than Hertz, it was necessary, in some instances, to "translate" her scoring symbols into those of Piotrowski. This was accomplished by means of the comprehensive table given by Bell (5).

The accuracy of the writer's scoring was checked by having a large sample of the records re-scored by other psychologists who were competent in the Rorschach method. Differences in scoring were resolved by critical discussion.

After the psychograms were computed and the qualitative scoring had been accomplished, the records were examined and rated for the presence or absence of the reputed suicidal factors and configurations and their constituent signs. For each record it was determined whether the configurations found by Hertz, Beck, Rabin, Piotrowski, and Pratt, the signs reported by White and Schreiber, and the typical content found by Lindner were, in fact, present in the record. If a particular sign or response pattern was identified in a record, the record was given a plus rating for that sign or pattern. If, as in the case of Hertz's configurations, where she considered the presence of five or more as indicative of suicidal trends, five or more were identified, the record was scored plus for these configurations. If four or fewer were present, the record was scored minus. In order not to lose the possible discriminating value of any of her configurations, even fewer than five were included in the statistical treatment of the results, and tests of significance were applied to each one of them.

In order to test the discriminative power of each sign, or pattern of scores, its frequency of occurrence in both groups was noted. Following the suggestion of Cronbach (7) Chi-square was used as the most appropriate test of significance for a dichotomized criterion (suicide—non-suicide) and dichotomized ratings made from the Rorschach, (ex., shading shock present—shading shock absent). This test provided us with an answer to the question, "did the suicidal group in fact contain more deviates than the control group in the particular score being studied?" If it did, the null hypothesis would be untenable (11). Since we were also interested in the magnitude of the relationships obtained, we computed the Phi coefficient to determine the degree of association between the two dichotomous variables. Phi coefficients were computed in all instances in which a statistically significant Chi-square was obtained.

Results

Table 1 presents a comparison of the suicidal and non-suicidal groups in terms of the Rorschach signs, categories, and configurations reputedly indicative of proneness to suicide. The number and percentage of subjects in each group showing a particular sign or configuration are given. Wherever differences between the groups appeared, Daniel's (8) table of statistically significant differences in observed percentages was used to determine the reliability of these observed differences. In addition, Chi-squares and Phi coefficients were computed in all cases in which the table showed a statistically significant difference or whenever the observed difference tended in the direction of significance. This provided a check on the table and also yielded an estimate of the degree of the relationship between the variable and the criterion.

The average number of responses given by the suicidal group was 23, with a range from six to 76. The non-suicides gave a mean number of responses of 21 and a range from three to 57.

As can be seen from the table, the two groups are very similar in respect to most of the Rorschach symbols and scoring categories studied. Apart from five of the configurations established by Hertz, only the presence of dark shock on plate IV and *M* through animals discriminated between the suicides and non-suicides. Three other variables, neurotic structure, sudden and/or inappropriate outbursts, and numerous *c′*, fell slightly below the level of statistical significance.

It was surprising to discover that most of the Rorschach variables which in the past literature have been alleged to be of value in differentiating suicides from non-suicides were unable to do this in the present study. However, a much greater proportion of suicides than of non-suicides showed five of Hertz's configurations, namely marked anxiety, depressed states, withdrawal, resignation, and agitation. Table 1 shows that only five of the 10 configurations developed by Hertz reliably discriminated between the two groups. Although the other five configurations did not so discriminate, it is one of the major findings of

TABLE 1.—Comparison of the Suicidal and Non-Suicidal Groups in Terms of the Factors and Configurations Reputedly Indicative of Suicidal Trends and the Reliability of Differences between Them

Indicators of Suicide	Suicidal Group		Non-Suicidal Group		P	ϕ
	No. showing sign	% showing sign	No. showing sign	% showing sign		
Marked anxiety	35	87½	26	65	*	.235
Active conflict	31	77½	25	62½	x	—
Neurotic structure	35	87½	28	70	x	—
Depressed states	22	55	8	20	†	.34
Ideational symptomatology	22	55	21	52½	x	—
Withdrawal	16	40	7	17½	*	.22
Constriction	12	30	11	27½	x	—
Sudden and/or inappropriate outbursts	30	75	21	52½	x	—
Resignation	15	37½	4	10	†	—
Agitation	17	42½	7	17½	*	.245
Hertz: 5 or more configs.	35	87½	11	27½	†	.58
Hertz: 6 or more configs.	24	60	4	10	†	t = .70
Hertz: 4 out of 7 configs.	28	70	6	15	†	.53
Active fantasy (M > 3)	9	22½	4	10	x	—
Dark shock (plate IV)	23	57½	16	40	*	.28
High number of *R* (>32)	11	27½	6	15	x	—
Exper. bal., *M* < sum *C*	25	62½	26	65	x	—
High *CF* (3 or more)	12	30	19	47½	x	—
Low *FC* (1 or less)	30	75	28	70	x	—
Low *Fc* (no vista)	28	70	29	72½	x	—
High S (4 or more)	4	10	4	10	x	—
High S (3 or more)	8	20	6	15	x	—
Significant content (morbid mood)	12	30	11	27½	x	—
High P (7 or more)	9	22½	7	17½	x	—
F% < 40%	16	40	23	57½	x	—
Pure *C* present	17	42½	17	42½	x	—
FM present	37	92½	34	85	x	—
Hostile *M*	13	32½	7	17½	x	—
Aggressive *FM*	10	25	13	32½	x	—
Color shock	33	82½	26	65	x	—
Dark and color shock combined	19	47½	13	32½	x	—
Lindner's "suicide responses"	2	5	2	5	x	—
Numerous *c'* (>3)	8	20	3	7½	x	—
c' (2 or more)	15	37½	10	25	x	—
Beck's *F*+% below 70	7	17½	6	15	x	—
Many *W* (above 30%)	23	57½	28	70	x	—
CF + *C* > *FC*	29	72½	24	60	x	—
Piotrowski: all 4 signs	0	0	0	0	x	—
Piotrowski: 3 out of 4 signs	7	17½	3	7½	x	—
M through animals	11	27½	4	10	*	—
m present (1 or more)	15	37½	17	42½	x	—
FC_w (color white responses)	5	12½	6	15	x	—

* Significant at the 5 per cent level.
† Significant at the 1 per cent level.
x—Not significant.

this study that five or more suicidal configurations were given by 87 per cent of the suicidal group and by only 27 per cent of the control group. This difference is significant beyond the .01 level of confidence.

Six or more of Hertz's configurations were given by 60 per cent of the suicides, but by only 10 per cent of the controls. This difference, too, is significant beyond the .01 level. Since there were only four entries for one of the cells, Chi-square was not considered to be an appropriate test of significance. The tetrachoric

correlation coefficient of .70 calculated instead strongly supports Hertz's contention that six or more configurations in a record reliably points to suicidal trends in the subject.

The mean number of suicidal configurations was also computed for both groups. The suicides gave an average of 5.8 configurations, while the non-suicides gave an average number of 3.9. In an attempt to reduce somewhat the rather formidable labor involved in analyzing a protocol for the presence of Hertz's 10 configurations, the writer also calculated the number of subjects in each group that showed four out of the seven most sensitive configurations. He eliminated from his calculation the configurations, "active conflict", "ideational symptomatology", and "constriction" since they had come nowhere near differentiating between the two groups. He retained "neurotic structure", and "sudden emotional outbursts" since they had come close to doing so. Using these two configurations of borderline significance and the five significant configurations, it was found that 70 per cent of the suicides, but only 15 per cent of the controls, gave four out of the seven configurations. This difference was also significant beyond the .01 level.

Discussion

It came as something of a surprise to the writer that the rather strict, if not mechanical, procedure utilized in determining the presence of Hertz's configurations in a record should have yielded such significant results. It seems that this method, designed to counteract the tendency so prevalent among Rorschach workers to seize on one or two features in a protocol and infer from them that a particular personality trait or conflict characterizes his subject, has put the analysis of the configurations on a more objective basis. It can be readily communicated to and replicated by other experimenters. It has the merit of requiring the presence of at least several (depending on the number of elements in the configuration) component factors all pointing in the same direction before the judgment is made that the individual shows, let us say, "depressed states". The writer does not advocate a mechanical checking and adding of signs although many of the signs and ratios obtained from the psychogram may be handled by the busy clinician in a routine manner. For example, given adequate normative data, it can be quickly and easily determined whether a record shows "low *FC*", "low *M*", "high *P*", "high *F*+%", retarded reaction time", etc. However, other factors such as "overvalent material", "pathological content", and "free floating anxiety" require a careful scrutiny of the whole record before the decision can be made that they are or are not present. The fact that Hertz's configurations were scored conservatively may account, in part, for the discrepancy in the mean number of suicidal configurations characteristic of each group as found by Hertz and by the writer. Hertz's suicidal groups gave an average of 7.8 suicidal configurations while her non-suicidal clinical groups gave an average of 4.8 (13). Our corresponding figures are 5.8 and 3.9, respectively. Despite the relative success of our adaptation of Hertz's method in screening out the suicides from the clinical population, it should be noted that using five configurations as the criterion, 27½ per cent of the non-suicidal group were misidentified as suicidal.

Using six configurations as the criterion to determine which subjects constituted serious suicidal risks, only 10 per cent of the control group were incorrectly labeled suicidal. The corresponding figures given by Hertz were 22 per cent for five configurations and 5 per cent for six or more configurations. This suggests that Hertz, using her own technique, was somewhat more successful than the writer in detecting suicidal trends and in avoiding misidentifications.

The practical problem presented by obtaining a "false positive" in one out of every seven cases (4 out of 28) should serve as a stimulus to caution in the application of the method. It also points up the need for greater refinement of the configuration technique.

In trying to account for the fact that Hertz's configurations, "active conflict", "ideational symptomatology", and "constriction" failed completely to differentiate between the two groups, it must be remembered that both groups contained a considerable proportion of paranoid schizophrenics. Since paranoid schizophrenics are distinguished clinically and on

the Rorschach (25) by pathological ideation and constricting caution, the latter two configurations were unable to discriminate between them. It is difficult to explain why the configuration "active conflict" should have failed to differentiate between the two groups. It may be that since most of our subjects were recent admissions and acutely ill at the time of testing, the majority of them still experienced "active conflict".

Beck's (2) reported experience with suicidal records was substantiated only in part by the results of the present investigation. Oppressive anxiety, *Y* shock on card IV, and depressed mood reliably differentiated the suicidal from the non-suicidal clinical group. Strenuous inner conflict and active fantasy did not. As for "most superior intelligence", this is one hypothesis that may be refuted with considerable certainty. Wechsler-Bellevue Full Scale I.Q.'s were available for all but two of the 80 subjects. Table 1 shows that the mean I.Q. for the suicides was 105.5, which indicates good average intelligence. This figure is almost identical with that given by Fisher (9) for his 20 suicidal schizophrenics. Their median I.Q., as measured by the Wechsler-Bellevue Vocabulary subtest was 106.0. Pratt (20) reports a mean I.Q. of 108 for 29 subjects in her suicidal group. Only two of our suicides had I.Q.'s that fell into the very superior range on the Wechsler.

Rabin's (21) hypothesis that a combination of color and shading shock should be considered as an ominous warning of suicide was not supported by the data. Although more suicides than non-suicides showed this pattern, the difference was not statistically significant.

Lindner's "suicide responses" given to plate IV, proved to be useless. Only two suicides and two controls gave responses of the type described by Lindner. Thus it would seem inadvisable to rely on them to detect suicidal trends on the Rorschach.

The constellation of scoring categories advanced by Piotrowski (19) as pointing to suicidal tendencies also did not succeed in uncovering suicidal trends on the Rorschach. Although c' responses seemed to occur more frequently in the records of suicides than of controls, neither the sign $c' > 3$ nor c' (2 or more) yielded a reliable difference between the two groups. It is possible that Piotrowski's signs were derived from a non-hospitalized population and are, therefore, not strictly applicable to the present sample which was, for the greater part, psychotic.

We were likewise unable to corroborate the findings of Pratt (20). It is true that our suicides, like hers, showed a low number of *F*%, a low number of vista responses, and an extratensive experience balance. However, this in no way distinguished them from the non-suicidal controls who also showed this pattern. Although both Pratt (20) and the writer used the same norms (4), differences in their findings are striking. One possible reason for this might be that Pratt did not equate her two groups for intelligence.

In the present study rigorous criteria were applied in the selection of the experimental and control groups. More than the usual number of relevant conditions were held constant. It is probable that negative results were obtained for most of the Rorschach summary scores precisely because the two groups were so well-equated initially for age, sex, education, general intelligence and the absence of shock treatments. This equating process resulted in a relatively homogeneous group except for the independent variable, which was actual suicidal behavior. It may well be that positive results reported in the past literature were due, at least in part, to the fact that one or more of these variables were left uncontrolled. Our results closely approximate those of Fisher who found that ". . . the conventional single Rorschach categories and signs do not adequately distinguish the suicidal schizophrenics from the non-suicidal schizophrenics" (9, p. 252).

Though White and Schreiber (28) deplore a statistical approach to the Rorschach, four of the indicators of suicide claimed to be valuable by them were tested in the present investigation. None of these was able to discriminate between the suicides and non-suicide groups. Both groups gave almost equal numbers of pure color responses, animal movement, and inanimate movement responses. Neither did a low *F*% contribute anything to the process of differentiation.

It was interesting to note that none of the commonly accepted indicators of hostility on the Rorschach (hostile *M*, aggressive *FM*, high *S*, pure *C*, responses to black, explosive

m, content mentioning fighting or injury) occurred with any greater frequency in the suicidal than in the non-suicidal clinical group. It is true that a somewhat greater number of suicides than of controls gave the sign "dark shock" and that Piotrowski has suggested that dark shock may indicate "fear of repressed, aggressive impulses" (19, p. 76). Nevertheless, the statement seems warranted that hostile impulses are no more prevalent among suicides than among other types of hospitalized psychiatric patients, or if they are, they are not projected on the Rorschach test.

Although only 27 per cent of the suicides and 10 per cent of the controls gave the sign *M* through animals, this difference is significant at the .05 level. It suggests that Piotrowski's interpretative hypothesis in which he considers this type of a response to be indicative of a certain pessimism and disillusionment with people may well be correct. Some examples of *M* through animals intended to elucidate this type of response are: "Two ants camouflaging something," given to D_1 of card II by a suicidal paranoid schizophrenic; "It looks like two teddy bears dancing," given to *W* of plate II by a young homosexual, and "Two worms talking to each other. I don't know if they are talking or not though, maybe they are fighting" given to D_1 and D_{22} of plate V seen in a side position. This latter response was given by a highly intelligent schizophrenic girl who was subject to prolonged depressive moods, during one of which she jumped into the Mississippi River.

One of the implications of the present study is that it seems fruitless to pursue further the attempt to correlate diagnostic "signs" such as discrete Rorschach symbols, ratios, and scoring categories with the external criterion of suicidal behavior. By and large, they simply do not adequately discriminate between groups, and even when they do, as in the case of dark shock and *M* through animals, too few subjects give them for it to be of value in the prediction of suicide in individual cases. An analysis of the data seems to justify the conclusion that only the configurations developed by Hertz are of any practical value to the clinician in the accurate diagnosis of suicidal behavior.

By way of promoting progress in this field, it is suggested that what is sorely needed is a coordinated group research program. If a central agency could be established for the purpose of collecting and re-evaluating the four to five hundred suicidal Rorschach protocols which have already been reported on in the literature, it would be possible to have invaluable normative data on suicides, as well as a great deal of useful information about the suicidal personality.

A suggestion for further research may be worth making. The writer's case material indicates that there appears to be a real difference between those Rorschach protocols obtained by him prior to the subject's suicidal attempt when compared with those collected after suicide had been attempted. Rabin (21) made a similar observation. He had the rare opportunity of administering pre- and post-suicidal Rorschachs to the same subject. When comparing the two, he found that the second Rorschach was much more productive than the first one, and he expressed the belief that the suicidal act represented a cathartic experience for the subject which liberated much of his previously inhibited emotional energy. It is, therefore, suggested that future research in this area might focus specifically on the pre-suicidal Rorschach in order to accumulate knowledge of what a person is like who is about to commit suicide.

Summary

The Rorschach protocols of 40 suicidal hospitalized psychiatric patients and 40 non-suicidal patients were analyzed for the presence of 42 Rorschach factors and configurations reputedly indicative of suicidal tendencies. The two clinical groups were equated for age, sex, educational level, and general intelligence. Both groups were composed entirely of patients suffering from functional mental disorders.

A comparison of the two groups by means of Chi-square revealed that of 27 conventional Rorschach symbols, ratios, and scoring categories only dark shock given on plate IV and the number of responses in which animals behaved like humans significantly differentiated between the two groups. These results demonstrate that a large number of standard Rorschach variables that have been advanced in the literature as predictors of suicidal tenden-

cies failed to show any positive relationship to actual suicidal behavior.

Of the suicidal configurations reported by Hertz, five reliably distinguished between the two groups. These were: marked anxiety, depressed states, resignation, withdrawal, and agitation. Two others, neurotic structure, and sudden and/or inappropriate outbursts, bordered on statistical significance. By applying the configuration technique described by Hertz, it was found that 87 per cent of the suicides and 27 per cent of the non-suicides gave five or more suicidal configurations. However, 12 per cent of definitely suicidal patients were missed with this technique. Six or more of Hertz's configurations were given by 60 per cent of the suicides and only 10 per cent of the controls.

When an abbreviated form of Hertz's method was attempted, in which only the seven most valid configurations were utilized, it was found that 70 per cent of the suicides and 15 per cent of the controls showed four or more of seven suicidal configurations.

Present evidence supports the conclusion that only the configuration technique developed by Hertz proved to have any considerable validity in the accurate diagnosis of suicidal behavior.

An analysis of certain commonly accepted indicators of hostility on the Rorschach disclosed that hostile impulses were not revealed with any greater frequency by the suicides than by the non-suicidal controls. This suggests the conclusion that suicides are no more hostile than are mentally ill patients in general. Therefore, the psychoanalytic dictum which holds that suicide is a form of self-hatred or aggression toward others that has been blocked and turned inward against the self could not be corroborated.

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STATUS DENIAL IN GROUP PSYCHOANALYSIS

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The rapidly growing use of the group method of psychotherapy is attended with many unanswered questions. Many of these questions pertain directly to the results of the group method while others encompass generally the interpersonal dynamics which allow for personality change in group members. This paper is offered in the hope that it can throw some light upon the central dynamic involved, particularly as it is experienced by the therapist. It may be too that this dynamic operates, to some degree at least, in all psychotherapeutic endeavors. Six adult, heterogeneous, mixed and continuous groups have been observed and interacted with for a period of five years in both private and outpatient clinic practice.

The Distinguishing Feature of Psychoanalytic Groups

We perceive a primary structural difference in the psychoanalytic group which identifies it, separates it from other "group" therapies and radically removes it from the category "group" in our culture. This structural difference is the deep interrelatedness of persons who become, as the group analytic process proceeds, less and less encumbered with statuses and roles. (Status is defined as state, condition, or relationship and any relative position or rank either biologically or culturally determined. Status is static and is always accompanied by its dynamic aspect, role. Role is behavior related to characterization and functions.)

Psychoanalytic groups are composed of individuals whose initial behavior within the group is governed by certain culturally ascribed statuses. These statuses, upon which each individual relies so heavily, define his state, condition, relative position and relationships to the other members and to the therapist (8).

These statuses too describe certain rights, privileges and duties that each individual feels he must exercise in the group. And as these rights, privileges and duties are put into effect, roles are assumed, behavior emerges and group interaction occurs.

At this early moment in this process, the "psychoanalytic" group is merely a microcosm of society. It has the characteristics, including "advantages" and "disadvantages", of all social groups. It is relatively "non-therapeutic" in its functioning. It is mostly structured around certain statuses and certain role dynamisms which are affixed to these statuses. For the psychotherapeutic potential of the group to evolve, we believe that ascribed statuses and their accompanying roles must be denied.

This denial is quite general. It includes those statuses partially determined by biological (14) and physical factors, as well as those achieved through intellectual competence or social position. They are challenged and gradually minimized.

With this gradual denial of statuses, role behavior lessens in the psychoanalytic group, and a more fundamental relationship arises. Therapist and patient become *being and being;* leader and led become *being and being;* male and female become *being and being;* the younger and the older become *being and being;* the infirm and the sturdy become *being and being;* the neurotic and the healthy become *being and being.*

The Importance of Status Denial

It is hoped in group psychoanalysis (as it is in all psychotherapeutic ventures) that the prescribed behavior (thinking, feeling, acting, intuiting, and dreaming) of those who come for assistance will be undone and that a new behavior will arise.

I think it is significant to realize that all ascribed statuses are assigned to persons regardless of their innate differences, talents or longings. And insofar as individuals are adjusted to these statuses and play the roles designated, culture is transmitted without change, and society functions smoothly. This represents a sacrifice upon the part of the individual, a sacrifice which we can no longer in the therapy group allow him to make. We cannot permit him to be only his status and his status directed behavior, for we know that he is much more.

When statuses and roles are rigidly maintained within the analytic group, we observe the tendency to over-evaluate commitments demanded by culture. After all, we must realize that it is our culture, albeit, unhealthy elements within it and its faulty transmissions, that makes it mandatory that we have therapy groups

Group members attempt to bring into the group the same environment which made them ill. Thus, the members at the start see the group as a class room, as a religious meeting, or as a workshop in better living, and later on, the original family, etc. These preconceived and conceptualized authority-submissive occurrences are gradually disproved, and in the process the members (and therapist) become anxious. A new group member often gets very upset when the therapist is roughly and openly attacked by another member. His behavior always having been conditioned by an authority in the past, other than himself, his need will be to have this continued. He usually rigorously defends the therapist or counter-attacks the "unruly" one. Or, he may deny the experience totally or partially by deceiving himself. The most common self-deception practised is a rationalized belief that what he is observing is merely technique. He thinks that neither the attacking member nor the therapist really *means* his behavior. The interaction between the two, as he observes it, has an ulterior motive determined by their particular statuses, and it is only a means to an end. If these status-maintaining devices fail, the new member may have to leave the group.

The therapist, in his deep emotional involvement with the individuals in the group, is primarily interested in allowing new behaviors to emerge. Statuses, particularly if fixed, controlling as they do the reciprocal interplay between persons, prevent the emergence of new behavior. Thus, in a group, as is almost always the case, if a person identifies himself as patient, he is denying his therapist-part or potential (13). And because of this, behavior which is related to his *being therapist* does not emerge. And, alas, the therapist who does not undermine the status "patient" in the group establishes himself as "therapist" or "doctor" and mistakenly implies through this adherence to status that he alone needs no help and no direction.

Our culture sanctions conscious activity to a much greater degree than unconscious activity. It follows from this that culturally determined behavior many times is deficient in integrated subjective determinants. It is my conviction that much role action based upon status relegates the unconscious potential of an individual to second place. Fantasies, dreams, intuitions and anxieties are kept in abeyance in making a choice or stating a preference. But even more striking, our culture decries that when unconscious activities, i.e., fantasy-making or intuiting, are in the ascendency, this is a manifestation of a psychic disorder. We feel that this is not so. Psychic illness is probably dependent upon the undue repression and faulty utilization of this portion of our beings—known as the unconscious.

The creative urge, deep within all humans, is not in harmony with the status quo. In order to create (and self creation in the sense that Erich Fromm (4) uses it is all important), one must over-step one's bonds. Creation occurs in conflict. One cannot remain complacent while challenging the Gods.

The task of status reduction within the analytic group cannot be entered upon lightly. It is of crucial importance as it alters in a most therapeutically significant manner the group milieu. First, through this happening, the group becomes more truly cohesive. Individuals *belong* because they see themselves and others *sub species aeternitatis*. The matrix of our relatedness within the group is what we *are* and not what we are supposed to be or might become.

Secondly, we have found that empathic relatedness is directly proportional to the degree of status reduction. Thus, when a group member committed suicide and I was filled with sorrow, self-questioning and doubts, my status of therapist or leader was extinguished. I suggested an extra group meeting following this tragic occurrence. During this meeting the "patients" became my "therapist"—we were aware of this, and I thanked them for their help and did not charge them. It was during this period that empathy was greatest—that a bond emerged which brought us together and through this crisis. Deep empathic relatedness can only occur in status-free relationships when there is minimal role activity on the part of both therapist and members.

The Method of Status Denial in Groups

We feel that much of the beginning group psychoanalyst's activity might be devoted to the means of status denial. This is crucial because these measures insure his development of empathy, as indicated in the previous section, as well as his evolvement as a *therapist.*

If we clearly see the reciprocal nature of status, that therapist and patient are at fixed positions of opposite polarity, our procedure in status denial becomes somewhat clarified. We need only to alter our status (the therapist's) in order to alter the patients'.

The therapist's subjective investigation of his need for status and fixed role then becomes both meaningful and decisive. It is meaningful for upon this investigation depends his depth of empathy and decisive because without this investigation his over-all therapeutic effectiveness is limited.

The group psychoanalyst is therapist because he can jettison more easily and more completely the many statuses ascribed to him by his culture and by the group members than can the other group members. This is his *leadership.* His commitments to culture are minimal whereas the others are maximal. He welcomes the unconscious determinants of his and their behavior whereas the others reject or are skeptical of them.

To put this more absolutely, the therapist may not allow himself any measure of self-imposed omniscience or omnipotence. And still more difficult to achieve is the requirement of not allowing himself any significance stemming from either transferred or projected God-like attributes. These injunctions are clear enough. However, the very nature of the group, its original conception and fabrication and its continuing operation, all under the *aegis* of the therapist, make these injunctions very difficult ones, to say the least (10)!

Some believe that it is *too* difficult, and they are critical of the group therapist and his method. They point out, and perhaps rightly so, that some therapists use the group method because of their need to be the *leader* with all that this implies.

It seems to me that the superior intellectual status of the therapist, supported by the transferred and projected attitudes and actions of the group members, becomes the most formidable obstruction to status denial within the group.

If this be so, a fundamental step that the group psychoanalyst must make is to question the significance of his intellectual competence. This is achieved by allowing himself fully to experience in the group and at the same time to have his interpretative activities dependent upon feelings and intuitions as well as his intellect. The group analyst does not *know* how to live better than the members although in fact he may be living better than they are.

Recently a colleague permitted me to enter one of his psychoanalytic groups. We attempted from the start to keep my status obscure so that I would not know how to behave. Our attempt was only partly successful. I was introduced as Doctor Mullan, and immediately the others established a status and a role for me to enact. They said, "he is here to observe"; "he is not one of us"; "he is another therapist"; "he is in competition with Max." This, however, did not prevent me from having feeling reactions. I got extremely angry at another group member, blurted out that his simple smile annoyed me, and yelled at him for his inattention in always being late. This display of feeling was very upsetting to everyone. "If he is a therapist and well trained, how can he react so?" "Doesn't he *know* better?" "How can he treat unless he is better controlled?" "Can't he intellectualize his feelings rather than express them?" etc., etc. I found that I could do either one of two things. First, I could experience myself and my anxieties, let go with my feelings, and thereby become close and connected with the group. Or, second, I could intellectualize and conceptualize, either expressing my observations or not. In this latter situation I was unfeeling, remote and at a distance from the others. Also, in this latter instance, I was relatively free from an awareness of anxiety.

From this experience, from an experience in a leaderless therapy group and from my experience with continuous heterogeneous groups in my private practice, I have begun to realize that it is only through a longitudinal (life-span) emotional intertwining with the individual that status and role finally disappear. The therapist must have emotion for the individual at each moment in his development, and a cross-

sectional knowing of him at the present moment does not suffice.

The therapist, in this deep (life-span) relationship, must be able within himself to match qualitatively, if not quantitatively, every symptom, "trouble", conflict, fear, anxiety, perversion, emotion, defense, resistance, etc., expressed and felt by those around him. He must be truly accepting of this, his patient role as he is of his therapist role. He is therapist because he can better accept being patient than the other members (13).

As the therapist's intellectual and conceptualizing function is minimized, anxieties are felt, feelings, fantasies, and intuitions prevail. Interpretative activity then becomes a total biological function in which all of the metabolisms play a part.

We have a distrust for organization and order in any form in the group. It bespeaks of compulsiveness on the part of the therapist and an unfounded reverence for conscious activity over the thought to be chaotic unconscious.

Inclusiveness: A Factor in Non-Rejection

If, as I have indicated, status adherence is detrimental to group psychoanalytical experiencing, statuses which designate certain behaviors may not be used to determine admission or participate in the group. This is so for statuses both biologically and culturally ascribed. Thus, the placement of an unmarried virginal woman with a grandfather is possible as is the placement of a physician (psychiatrist) with an unemployed stenographer.

Recently I was approached by a group of doctors who had begun their psychiatric training, i.e., resident training. They came to me *en masse* and wished to be treated *en masse*. This posed many difficulties, all of which were used by them as resistance—that is, resistance to further and closer group experiencing. They coult not reveal themselves as openly as they might have because of the competitive nature of their work and their extra-group relationships. Part of this road block, however, was overcome upon the introduction of women, none of whom were physicians.

Status derived from social position cannot be acknowledged in group formation. To allow the social position of a prospective group member to control his group entrance (or to determine the group into which he might be placed) is to admit that the therapist has unresolved problems in this area.

It follows from this that therapy groups may be and perhaps should be basically inclusive and not exclusive. From a purely technical standpoint, this is advocated because the resultant behavior, both individual and interpersonal, becomes molar rather than molecular. We are certain that the segment of behavior that we observe and react to within the inclusive group is more revealing of personality than the behavior observed and reacted to in the more traditional one-to-one therapeutic relationship.

Our tendency towards greater inclusiveness limits to a minimum psychological testing of a person prior to his admission to a group. Rather than this, we relate ourselves to a new individual in the hope that immediately or in the near future he will be ready for the group experience. To routinely or spasmodically test individuals is to demand tacitly a certain status of them. In doing this we imply that all of what he is is not acceptable to us, and we indicate that we are concerned mostly with adaptation and not creative unfolding.

Groups which are heterogeneous, mixed (male and female) and continuous follow our policy of great inclusiveness. The therapist who uses these stratagems fits into the natural order and is unrejecting. This therapist resembles the accepting parent. This is the parent who after conceiving the child accepts him regardless of sex, physical or mental facility, and regardless of the presence or absence of inherited talent. Inclusiveness in the selection of members for analytic group participation closely approximates this ideal.[1]

The policy of great inclusiveness in the fabrication of a therapy group is only reasonable if two further conditions are espoused by

[1] This philosophy of inclusiveness has its counterpart historically and presently in the United States. "For how did it happen, after all, that that people which confessed the most heterogeneous racial stocks, the most varied soils and climates, the most diverse and contrasting economic interests, the most variegated religious pattern achieved a stable and enduring national character with an ease that confounded not only the expectations of her critics but history and experience as well?" (3).

the therapist. First, the therapist must prevent any procedure from becoming ritualized. Each session and each moment of each session are entirely different and cannot be blunted by a fixed procedure of any sort. Second, the therapist must prevent the group or the individual from behavior which is goal-directed. Behavior which is slanted towards some future accomplishment denies the all important immediate experiencing.

The Validity of Group Experiencing

From my experiences, I believe, as I am certain most psychotherapists do, that the validity of the therapeutic venture rests unequivocally upon the results attained from this venture. Thus validity is mostly related to the "ends", and much less directly related to the "means." And, most important, validity is rigidly attached to our theoretical frame of reference, to our value system and to the cultural concept of what is normal.

When one concerns himself with the validity of a therapy he is in a "status-fixed" state, for he is defining conditions that exist before and after therapy. And he is designating who is sick and who is well. This fact must be remembered when we consider the value of group experiencing in the next section.

The results of group psychoanalysis in which status denial is central are numerous and individual for each member. Thus far my results, although fragmentary, warrant its continued use and experimentation, and perhaps even to make the skeptical slightly less so.

Highlighting the signs of its effectiveness as a therapy is changed and changing behavior of the members and therapist. This changed and changing behavior is the resultant of two factors which I believe indicate that deep and lasting personality alteration is occurring. First, defensive and alienating behavior is lessened and, second, wishing, wanting, desiring for the *self* emerge with increased ability for making responsible decisions. These two decisive happenings stated with such facility and composure are not achieved easily. It is only after long, arduous hours of mutual expending of ourselves in non-status interrelatedness and non-role action that changes do occur. And as with all true therapies that change the basic personality, anxiety and despair (6) are often prominent and frightening features of my group endeavors.

To describe more fully these changes which do occur, individuals move from self-interest behavior to self-disinterest behaviors (or to group interest behaviors). These expressions are confusing and need elaboration.

Self-interest behavior is egocentric, having to do with one's preference for his pre-group (experience) personality, especially its neurotic components. Self-interest behavior advances one's own interests while ignoring those of the group. It is possessive behavior, exploiting the other for one's benefit. It is activity so prejudiced in one's behalf that all risk is removed, thus allowing the individual to maintain all of his rigidities which many times approach a moribund *status quo*.

This self-interest behavior seems to be required by culture or by the individual's concept of what is required by his culture. However, it is due to *faulty transmission* of the culture by parents and significant adults in the past and by most extra group contacts in the present. It is not that the culture is completely or even partially at fault (although undoubtedly it is, in some respects), but rather it is the manner or *means* of transmissal of the culture which is the key to our problem.

Self-disinterest activity is in reality group interest behavior and is for the good of the whole group *including onesself*. It is not sacrificial, and it is not based upon feelings of loyalty to the group nor any compliance to group mores. Its main characteristics are spontaneity and willingness to risk with an absence of possessiveness and prejudice. It is behavior which is truly experimental with no preconceived idea of gain or even of result.

In every instance it seems to me that self-disinterest behavior is synonymous with group interest behavior. This behavior is the behavior of the *real self* (5).

Within therapy groups untrusting distance is very gradually replaced by a personal closeness and an intimate connectedness. In ways quite peculiar, each individual reveals more and more of himself. This is only in part an intellectual process. More important, it is an emotional and somatic revelation. It is as though the truth about one's existence (or what he perceives his existence to be) may be

revealed with emotional and body participation for the first time.

Each individual transmits to all the others his own particular culture and his reaction to it. As time goes on, this transmission of these experiences—both past and present—becomes less inhibited and is for the purpose of the mutual (group) experience. Directly correlated with this we note that there is less and still less expediency in an individual's behavior as the group process unfolds. (This is in contrast to their parents who transmitted their (the parents') experiences, but with a large degree of personal expediency.)

Group members find that they no longer have to deny their *beings* in order to minimize, limit or control the response of others. Acceptance is two ways—the doer does and the responder responds, both in more total fashion.

The group has indicated to me a most certain equivalence—to be helped is synonymous with helping. One does not occur without the other. Help does not come from neatly conceptualizing the other's behavior, but rather it comes from a deep response which changes one, perhaps ever so slightly, and in turn the changed one will cause changes in the other's behavior. Although this is an over-simplification of the therapeutic transaction, it is, I believe, the fundamental of personality change within groups. It remains for us to investigate carefully and elaborate upon this most intimate happening if we are better to understand the "curative process" in groups.

Intrapsychic and psychosomatic disturbances flare up and gradually lessen within the group. In all instances of *real* change as contrasted with mere shifting, there is the essential internal affect-symbol alteration. This alteration is in the quantity and quality of the affects attached to all images, such as mother, father, significant person, past experiences, etc.

The Value of Group Experiencing

The value of the therapeutic venture is entirely different and separate from its validity. The value stems *not at all* from the results but rather from the momentary hour to hour, day to day happenings. The value for the group members and therapist alike who continue to relate over long periods of time must come, it seems to me, at each second of emotional contact. Thus value is a function of *the means*. It is not directly related to *the ends*. And most important, value is rigidly attached to our need, as human beings, for satisfaction regardless of our theoretical frame of reference, our value system or the cultural conceptions of what is normal.

When one is concerned with value, he is in a "status-free" state, for he is primarily, if not totally, experiencing the moment at hand, and conditions existing before and after are not present in his consciousness. He cannot, nor does he try to, differentiate sickness from wellness. This is in contradistinction to validity of therapy.

I have been questioned repeatedly by my family, friends and colleagues as to why the group experience is so important for me. Even though at times I become fatigued and desire a vacation, I do not feel that I want to leave the group. (Since my groups are continuous, they remain for the most part intact. There are, of course, departures and new admissions, but at this time and for the past two years, I have formed no new groups.) I would like to suggest that although the group is extremely important to all members at particular times, it is most meaningful to the therapist all of the time. If this is not so, the therapist might wonder *what he is doing in the group*. Shouldn't he be elsewhere? Or what might he do to make the group experience more valuable for *himself*?

Aside from the material (making a living) needs which are met quite satisfactorily in group psychoanalytic practice, there are other needs, much more essential, which are achieved by the therapist (and members) in the group. These needs are certainly fulfilled outside of the therapy group in all relationships but, I believe, to a much lesser extent because within the analytic group there are less status restrictions to symbolic experiencing. Thus the therapist as well as the members has the opportunity for a more complete relationship.

Psychoanalysis differs from most other psychotherapies in that one individual in the transaction is expected and encouraged to form a fantastic relationship with the other individual, the therapist. The patient's experience then is an experience in fantasy, i.e., a symbolic experience. What I suggest, as do others (11, 12, 13), is to make this unilateral fantastic rela-

tionship bilateral. It is not enough for the therapist to enter the fantasy relationship silently and passively, but he must be its instigator and its promoter.

In the group it is more difficult for the therapist to maintain symbolic relationships. But insofar as he is able, certain intense satisfactions accrue which are directly related to his being human (2, 1, 7).[2]

First of all, the therapist and members all become material for certain sensuous and perceptual satisfactions (9). This satisfaction, not unlike the artist's when he contemplates his materials and perceives certain forms and movements, is inherent in the group and in the group's being together. This value is enhanced when one is contemplative, disinterested[3] and unattached. The mood for this appreciation is one of cosmic indifference or of impersonal sympathy with all of mankind whose common destiny we share. When achieving this value, our interpretative activity should be minimal.

Secondly is the satisfaction which is derived from observing the relatedness possibilities of individuals who differ vastly culturally and in their culturally determined behaviors. This satisfaction grows as members become more individual and yet relate more openly and more closely to the others. Once again this value is enhanced when one is contemplative, disinterested and unattached. The mood too is one of cosmic indifference or of impersonal sympathy, as mentioned above. And again our interpretative activity should be minimal.

And thirdly is the intense and continual satisfaction of self-discovery. The psychoanalytic group in which therapist and members are bereft of status and rely heavily upon mutual symbolic fantasies gives the therapist the best opportunity to come face to face with himself. Some central questions for which he seeks answers are, "What am I doing here?; what needs are being fulfilled and by whom?; whom do I prefer and what behavior do they possess which pleases me?; who am I with or without their behavior?; etc.

This satisfaction comes only when one is emotionally intertwined longitudinally (life-span-wise) with all the members. There is no contemplation, no separateness, no distance—only deep interest, feeling and attachments. At this time the interpretative activity should be maximal.

One's feelings and intuitions must play the predominant part in all interpretative descriptions. Interpretations then are meaningful for members and therapist alike. The authenticity of an interpretation is assured when there is a resultant change in the behavior of both therapist and member, or member and member. From this it can be seen that valid behavior changing interpretations can originate in either therapist or patient. Thus, therapist is patient and patient is therapist. And the status therapist and patient are both meaningless.

The mood for the therapist's achieving this satisfaction is just the opposite of the cosmic indifferent attitude. It is a deep human concern and awareness, and in this mood interpretative activity is most valid.

All individuals upon entering a psychoanalytic group, conditioned as they are by their culture, confuse validity with value. They all have preconceived notions as to the purpose of the projected group experience. These purposes are individual and tenaciously clung to. Even when an individual is confronted with five or six reasons for group participation which differ from his, he still clings to his purpose for being with us.

The common denominator of all of these purposes for being in the group is that they are goal directed. Individuals want to get something from the group experience which will modify their adjustment to others, make life situations easier or make them feel better by reducing some bothersome symptoms, etc. In short, as individuals begin in group psychoanalysis, they are prone to use the group experience *only* as a means toward some pre-

[2] The importance of symbolization to the human being has been described by many. I would refer the reader to Ernst Cassirer (2) and Bernard Berenson (1). Berenson states, ". . . Art is not actual life it is true but is ideated life and perhaps as important. What distinguishes us from the other mammalia is precisely the capacity for this ideated life. . . ." However, my idea about the importance of symbolization most closely approaches those of Susanne Langer. ". . . This basic need which certainly is obvious only in man is the need of symbolization. The symbol making function is one of man's primary activities like eating, looking or moving about. It is a fundamental process of the mind and goes on all of the time . . ." (7).

[3] Disinterest may be defined as not serving to advance one's own private interest and of no personal concern. Disinterest too, includes two additional conceptions: non-possessiveness and unprejudiced activity.

conceived, self-interested end. The group for them at this moment has mostly an extrinsic worth. This extrinsic worth is similar to the (therapist's) validity of the therapy as I have explained.

As status is denied and as ritual and goal directed activity are scrutinized, the value of the group as a living experience comes to the fore. We find ourselves in the group not because the group conveys or is likely to convey some meaning about life but *because it is our life.*

Members become anxious when they ask the question, "If I am not a patient, why am I here?", particularly when there is no answer to this question but an *intense longing to be here.* Another question packed with status and role connotations is "If you are not 'doctor' why do I pay you?" I answer this depending upon the momentary emotional interrelatedness within the group. "You pay me to remain 'patient'. You pay me to keep me 'doctor'. Today you pay the 'doctor'; perhaps tomorrow you will pay *me,*" etc.

Gradually the intrinsic value of the group is discovered, and all of the behaviors within the group have momentary meaning and essentiality. In the *being* and *being* relationship members discover a closeness never achieved before even in the biological family. The group then becomes substitutive for desired and needed relationships outside of the group.

We have questioned why individuals remain in groups, particularly analytic groups, when status is denied. Certainly the conception of positive transference is helpful in explaining the need to attend, particularly at first. But after statuses have been undermined, transferences are difficult to maintain and still an individual continues in the group. I feel that the intrinsic value of the group experience has been established, and until he finds similar value in his extra (therapy) group relationships, he necessarily will have to remain in his group.

We might wonder too about *our* need to remain in the group. I believe it is closely allied to our need to be psychotherapists. My own need for the group is contained in the validity and value of the group experience.

Conclusion

An important constituent of group psychoanalysis is an understanding of the significance of status denial. The undermining of status is a function of the therapist. He must be aware of his own status needs before he can gradually lessen status and role activities within the group. Empathy, the core of psychotherapy, only occurs in status-free transactions.

It is believed that a group psychoanalytic orientation which is slanted toward obtaining mutual value (therapist and members) will open new vistas, ask new questions, and will bring the 'here and now' into much clearer focus.

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MEDICATION INTO SUBMISSION
The Danger of Therapeutic Coercion

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In the field of medicine, magic thinking is still rampant. Though we flatter ourselves that we are rational and logical in our choice of therapy, somewhere we know that hidden feelings and unconscious motivations direct our prescribing hand. In spite of the therapeutic triumphs of the last fifty years—the era of chemotherapy and antibiotics—let us not forget that the same means of medical victory can be used to defeat our purposes. No day passes that the mail does not flood the doctor's office with suggestions about what to use in his clinical practice. My desk overflows with gadgets and multicolored pills telling me that without them mankind cannot be happy. The propaganda campaign reaching our medical eyes and ears is often so laden with suggestions that we are easily persuaded to distribute sedatives and stimulants where straight critical thinking would deter us, and we would seek the deeper causes of the difficulties. This is true not only for modern pharmacotherapy, but the same tendencies can also be shown in psychotherapeutic methods.

This study aims to approach the problem of hidden therapeutic prejudices with the question: how compulsively can they take possession of human endeavor? In former studies on menticide I was able to describe political attempts to bring the human mind into submission and servility. Therapeutic methods are also able to enslave people. The need to manipulate patients as a result of counter-transference occurs not only in the psychoanalytic situation, but also takes place in every doctor-patient relationship.

1. Dependency on the Drug Provider

Not long ago I was asked to give advice to a couple who had had marital difficulties for a long time. Although at the time of their marriage the husband and wife were deeply in love, each had brought to their "adventure of happiness" the wrong emotional investment. She had expected him to be a kind of Hollywood hero, an eternal gallant, dedicated completely to her. He had been touched by her childlike dependency, but secretly he had hoped she would be mother, nurse, and companion to him. As might have been predicted, neither partner lived up to the other's expectations. Both were bitterly disappointed, and neither realized what was wrong. After a while, the wife became a whining, complaining nag; there were daily scenes, arguments and recriminations. The husband began to seek solace away from home, with women he had known before his marriage. Soon thereafter the wife found herself unable to sleep and started to take barbiturates to bring herself the soothing forgetfulness of slumber. She became completely dependent on them and retreated into all kinds of vague bodily complaints which could be relieved temporarily by more drugs. When the husband first discovered this, he was appalled. But gradually he noticed that the drugs seemed to modify and ease the discord of their relationship. Under almost constant sedation, his wife was no longer a shrew. Indeed she was no longer even interested in him. He discovered that he had much more freedom and could spend his evenings and holidays as he chose as long as he provided her with the wherewithal for those magic pills that had restored peace to their home. But one night the wife took an overdose of barbiturates, and it looked almost as if she had attempted suicide. This nearly fatal occurrence aroused all the husband's guilt feelings, and he sought medical and psychological help in an effort to discover what had gone wrong in the marriage of two people who had felt so much initial love and good will.

This is only one of many cases in which the sleeping pill and drug habit cover up deep-seated, unspoken unhappiness. The growing dependency on easy escape into a soft and mild-appearing sedation and oblivion is an evil we must recognize. The general

increase in the use of sleeping drugs is alarming, and the number of barbituric suicides is growing every year. Nor can we look at such a phenomenon as simply a medical problem. Dependence on alcohol, barbiturates, drugs or other soporifics indicates latent and overt social fear and anxiety and the need to escape from reality. Drugs seem to their users to be miracle tablets which provide a passive and magic solution to all problems, and bring them to a point beyond the boundaries of the real world. The leader of a gang, who is able to provide such drugs for his members, is more sure of their servility.

2. The Seductive Action of the Search for Ecstasy

Among drug addicts of all sorts we repeatedly encounter the yearning for a special ecstatic and euphoric mood, a feeling of living beyond everyday troubles. "Thou hast the keys of Paradise, oh just, subtile and mighty opium!" De Quincey says, in his *Confessions of an Opium Eater*. Although the ecstatic state is different for each person who experiences it, the addict always tells us that the drug takes him to the lost paradise he is looking for; it brings him eternal euphoria and a free feeling of elation that takes him past the restrictions of life and time.

In the ecstatic state, man rearranges the universe according to his own desires and, at the same time, seeks communion with the Higher Order of things. But the ecstatic state has its negative as well as its positive aspects. It may represent the Yogi's mystic feeling of unity with the universe, but it may also mean the chronic intoxicated state of the drunkard or the passion of some manic psychotic states. The feeling may express the intensified spiritual experience of a dedicated study group, but, on the other hand, it may be encountered in the lynch mob and the riot. There are many kinds of ecstasy—esthetic ecstasy, mystic ecstasy, and sick, toxic ecstasy.

The search for ecstatic experience is not only an individual search, it often reaches out to encompass whole groups. When moral controls become too burdensome, whole civilizations may give themselves up to uncontrolled orgies such as we saw in the Greek Bacchanalia and the contagious dance-fury of the Middle Ages. In these mass orgies, artificial stimulants are not necessarily used. The hypnotic crowd action can induce the same loss of control and sense of union with the outside world that we associate with drugs. In the mass orgy, the individual loses his conscience and self-control. His sexual inhibitions may be released; he is temporarily relieved of his deep frustrations and the burden of unconscious guilt. He endeavors to re-experience the blissful sensations of infancy, the utter yielding to his own body needs and desires (3).

The ecstatic feeling of participation, of mass-elation, is the oldest psychodrama in the world. Taking part in some common action results in a tremendous emotional catharsis for every individual in the group. This feeling of participation in the magic omnipotent group, of reunion and communion with the all-embracing forces in the world brings euphoria to the normal person and feelings of pseudo-strength to the weak. The demagogue who is able to provide such ecstatic release in the masses can be sure of their yielding to his influence and power. Dictators love to organize such mass rituals in the service of their dictatorial aims.

Ever since man has been a conscious being, he has tried from time to time to break down the inevitable tension between himself and the outside world. When mental alertness cannot be relaxed now and then, when the world is too much and too constantly with him, man may try to lose himself in the deep waters of oblivion. Ecstasy, drugged sleep, and its fantasies and swoons of mental exaltation temporarily take him beyond the burdensome effort of keeping his senses and ego alert and intact. Drugs can bring him to this state, and any addiction may be explained as a continuing need to escape. The body cooperates with the mind in this search for an evasion of life, and drugs gradually become a body-need as well as an emotional necessity.

In criminal circles addictive drugs like cocaine or heroin are often given to members of the gang in order to make them more submissive to the leader who distributes them. The man who provides the drug becomes almost a god to the members of the gang. They will go through hell for him in order to acquire the drug they so desperately need.

In the hands of a powerful tyrant, medication into dependency can become extremely

dangerous. It is not unthinkable that a diabolical dictator might want to use addiction as a means of bringing a rebellious people into submission. In May, 1954, during a discussion in the World Health Organization, the fact was disclosed that Communist China—while forbidding the use of opium in her own country—was exporting it in great quantities to her neighbors, who have consequently been compelled to carry on a constant struggle against opium addiction among their own people and against the passivity which results from use of the drug.

The Nazis followed a similar strategy. During the occupation of Western Europe, they created an artificial shortage of normal medicaments by halting their usual export of healing drugs to the "inferior" countries. However, they made an exception in the case of barbiturates. In Holland, for example, these drugs were made available in many drug stores without a doctor's prescription, which is against Dutch law. Therapeutic drugs were not available for medical work, but those drugs which created passivity, dependence and lethargy were widely distributed.

The totalitarian dictator knows that drugs can be his helpers. It was Hitler's intention, in his so-called "biological warfare", to weaken and subdue the countries that surrounded the Third Reich, and to break them for good. Hunger and addiction were among his most valuable strategic tools.

What has all this to do with the growing addiction and habit formation in our own country? I have already mentioned the alarming increases in barbituric death. But I would like to emphasize even more the psychological and political consequences. Democracy and freedom end where slavery and submission to drugs begin. Democracy, involves free, self-chosen activity and understanding; it means mature self-control and independence. Any many who escapes from reality through the use of alcohol and drugs is no longer a free agent; he is no longer able to exert any voluntary control over his actions. He is no longer a self-responsible individual.

3. Hypnotism and Mental Coercion

From time immemorial those who wanted to know the inner workings of the other fellows mind have used artificial means to find the hidden pathways to his most private thoughts. The primitive medicine man had several methods of compelling his victim to lose his self-control and reserve. Alcoholic drinks, toxic ointments or holy smoke were used to bring people into such a state of rapture that they lost their self-awareness and restraint. The victims, murmuring sacred words, often revealed their self-accusing fantasies or even their deepest secrets. In the Middle Ages, so-called witch ointments were used. These ointments were supposed to bring the anointed into touch with the devil. Since they contained opium and belladonna, modern science can explain the ecstatic visions they evoked as the typical hallucination-provoking effect of these drugs.

One of the first useful techniques medicine delivered into the hands of the pryer-into-souls was the knowledge of hypnosis, of that intensified mental suggestion that makes people give up their own will and brings them into a strange dependency on the hypnotizer. The Egyptian doctors of 3,000 years ago knew the technique of hypnosis, and ancient records tell us that they practised it.

In the hands of an honest therapist, hypnosis can be extremely useful. Particularly in dealing with psychosomatic diseases and with physical pain—the bastard son of fantasy and reality—hypnosis is the good Samaritan. But there are many quacks who practise hypnosis, not to cure their victims but to force them into submission—using the victim's unconscious ties and dependency needs in a criminal way. There are unconscious sexual roots to hypnosis, related to the passive yielding to the attacker, which the quack uses to give vent to his own passions. I once treated a girl who had gone before to such a "healer". It was only at the very last moment that she had been able to get out of her lethargic, submissive state and fight off his assault.

Not long ago I treated some teenagers who had tried to hypnotize each other. They wanted to learn the intricacies of the technique in order to increase their mental power over other people. Inspired by some comic book stories, they imagined that through the use of hypnosis they could influence girls to yield to their sexual advances. Thus they expected to become "supermen" who could make other

people instruments for the satisfaction of their own lust and will.

One of the most absorbing aspects of this whole problem of hypnosis is the question of whether people can be forced to commit crimes, such as murder or treason, while under a hypnotic spell. The famous novel, Trilby, is the story of a young girl living under a continual hypnotic spell imposed on her by Svengali, an older man who uses Trilby to act out his own criminal desires. Many psychologists would deny that such a thing could happen, and would insist that no person can be compelled to do under hypnosis what he would refuse to do in a state of alert consciousness. But actually what a person can be compelled to do depends on the degree of dependency the hypnosis causes and the frequency of repetition of the so-called post-hypnotic suggestions. True, no hypnotizer can take away a man's conscience immediately. But he can arouse the latent murderous wishes which may live in his victim's unconscious by continual suggestion and continual playing upon those deeply repressed desires. Actual knowledge of methods used in brainwashing and menticide proves that all this can be done.(3.4.) If the hypnotizer persists long enough and cleverly enough, he can be successful in his aim. There are many anti-social desires lying hidden in all people; the hypnotic technique, if cleverly enough applied, can bring them to the surface and cause them to be acted out in life. The mass criminality of the guards in concentration camps finds part of its explanation in the hypnotizing influence of the totalitarian state and its criminal dictator. Psychological study of criminals shows that their first violation of moral and legal codes often takes place under the influence and suggestion of other criminals.

True, the incitement to crime in a hypnotic state demands specially favorable conditions, but unfortunately these conditions can be found in the real and actual world.

Recently there has been much discussion of the problem of the psychiatrist who uses his special knowledge of suggestion to force a confession from a defendant. Such a psychiatrist is going beyond the commonly accepted concepts of the limitations of psychiatry and beyond psychiatric ethics. He is misusing the patient's magic trust in the medical therapist in order to provoke a confession which will then be used against the patient temporarily in his care. In so doing, the doctor not only acts against his Hippocratic oath, he also violates the Constitutional safeguards afforded the defendant by the Fifth Amendment to the United States Constitution, which protects a man against self-incrimination.

What a defendant will reveal under hypnosis depends on his conscious and unconscious attitudes towards the entire question of magic influence and mental intrusion by another person. People are usually less likely to stand on their legal rights in dealing with a doctor than in dealing with a lawyer or a policeman. They have a yielding attitude because they expect magic help.

An interesting example of this can be seen in a case that was recently decided by the Supreme Court. In 1950, Camilio Weston Leyra, a man of 50, was arrested and accused by the police of the brutal hammer murder of his aged parents in their Brooklyn flat. At first, under prolonged questioning by the police, Leyra denied any knowledge of the crime and stated that he had not even been at his parents' home on the day of the murder. Later, after further interrogation by the police, he said he had been at their home that day but he continued firm in his denial of the murder. He was detained in jail, and a psychiatrist was brought in to talk to him. Their conversation was recorded on tape. The psychiatrist told Leyra that he was "his doctor" although in fact he was not. Under slight hypnosis and after continued suggestion that Leyra would be better off if he admitted to having committed the murder in a fit of passion, Leyra agreed to confess to the crime. The police were called back in, and the confession was taken down.

During his trial, Leyra repudiated the confession, insisting that he had been under hypnosis. He was convicted, but the conviction was set aside on the grounds that the confession had been wrested from him involuntarily, and that his constitutional safeguards had been denied him. Later Leyra was brought to trial and convicted a second time. Finally his case was appealed to the Supreme Court, which

reversed the conviction in June, 1954, on the grounds that mental pressure and psychiatric techniques had been used to induce the confession.

For us, the question of Leyra's guilt or innocence is of less importance than the fact that under mental pressure he was induced to do what he would ordinarily have resisted doing, and that his confidence in the doctor, which led him to relax the defenses he would doubtless have put up against other investigators, was used to break him down.

Suggestion and hypnosis can be a psychological blessing, through which patients can solve emotional problems that resist conscious will, but they can also be the beginning of terror. Mass hypnosis, for example, can have a dangerous influence on the individual. Psychiatrists have found several times that public demonstrations of mass hypnosis may provoke a hypnotic dependency and submissiveness in many members of the audience that can last for years. Largely for this reason Great Britain has passed a law making seances and mass-hypnotism illegal. Hypnosis may act as a trigger mechanism for a repressed infantile dependency need in the victim and turn him temporarily into a kind of walking sleepwalker and mental slave. The hypnotic command relieves him of his personal responsibility, and he surrenders much of his conscience to his hypnotizer. As we mentioned before, our own times have provided us with far too many examples of how political hypnosis, mob hypnosis and even war hypnosis can turn civilized men into criminals.

Some personalities are more amenable to hypnosis than others. Strong egos can defend themselves for a long time against mental intrusion, but they too have a point of surrender. There are critical, selective persons who are much less sensitive to suggestion from the outside than to images from within themselves. We can distinguish between hetero-suggestive and auto-suggestive personalities, though quite a variety of reactions to hypnosis and suggestion could be distinguished. But even these auto-suggestive types, if subjected to enough pressure, will gradually build up internal justifications for giving in to mental coercion.

Those charming characters who are easily able to influence others are often extremely susceptible to suggestion themselves. Some personalities with a tremendous gift for empathy and identification provoke in others the desire to yield up all their secrets; they seem somehow to be the Father Confessor by the grace of God. Others, by reflecting their own deceitful world, may provoke the hidden lies and fantasies in their victims. Still others make us close up completely. Why one man should inspire the desire to give in and another the desire to resist is one of the mysteries of human relationships and contact. Why do certain personalities complement and reinforce one another while others clash and destroy one another?

4. Needling for the Truth

During the Second World War the technique of the so-called truth serum (the popular name for narco-analysis) was developed to help soldiers who had broken down under the strain of battle. Through narco-analysis by means of injections of sedatives, they could be brought to remember and reveal the hyperemotional and traumatic moments of their war experiences that had driven them into acute anxiety neurosis. Gradually a useful mental first aid technique was developed which helped the unconscious to reveal its secrets while the patient was under the influence of the narcotic.

How does the truth serum work? The principle is simple: After an injection the mind in half-sleep is unable to control its secrets, and it may let them slip from the hidden reservoirs of frustration and repression into the half-conscious mind. In certain acute anxiety cases, such enforced provocation may alleviate the anxieties and pressures that have led to breakdown. But narco-analysis often does not work. Sometimes the patient's mind resents this chemical intrusion and enforced intervention, and such a situation often obstructs the way for deeper and more useful psychotherapy. It is the same battle we see in the alcoholic, who resents the antabuse that restricts him. The principle of negativism and non-cooperation with the therapist is more important to him, so he risks being physically ill.

The fear of unexpected mental intrusion and

coercion may be pathological in character. When I first published my concept of menticide and brainwashing, I received dozens of letters and phone calls from people who were convinced that some outside person was trying to influence them and direct their thoughts. This form of *mental intrusion delusion* may be the early stage of a psychosis in which the victim has already regressed to primitive magic feelings. In this state the whole outside world is seen and felt as participating in what is going on in the victim's mind. There is, as it were, no real awareness of the difference between *I*, the person, and the world. Such fear-ridden persons are in constant agony because they feel themselves the victims of many mysterious influences which they cannot check or cope with; they feel continually endangered. Psychologically, their fear of intrusion from the outside can be partially explained as a fear of the intrusion of their own fantasies from the inside, from the unconscious. They are frightened of their own hidden unconscious thoughts which they can no longer check.

But it would be a vast oversimplification to stick an easy psychiatric label on all such feelings of mental persecution. For there are many real outside pressures in our world, and there are many perfectly normal people who are continually aware of and disturbed by the barrage of stimuli directed at their minds through propaganda, advertising, radio, television, the movies, the newspapers—all the gibbering maniacs whose voices never stop. These people suffer because a cold, mechanical, shouting world is knocking continually at the doors of their minds and disturbing their feelings of privacy and personal integrity.

There is the further question of whether or not the drugs used as truth serum always produce the desired effect of compelling the patient to tell the inner truth. Experiments conducted at Yale University in 1951 on nine persons who received intravenous injections of sodium amytal showed interesting results, tending to weaken our faith in these drugs. Each of the patients, prior to the injection, had been given a false cover story related to the period about which he was going to be questioned. The experimenters knew both the true and the false story. Let me quote from the report: "It is of interest that the three subjects diagnosed as normal maintained their cover stories. Of the six subjects diagnosed as neurotic, two promptly revealed the true story; two made partial admissions, consisting of a complex pattern of fantasy and truth; one admitted what most likely was a fantasy as truth; and the one obsessive-compulsive individual maintained his cover story except for one parapraxia (faulty or blundering action)" (1).

In several cases, American law courts have refused to admit as evidence the results of truth serum tests, largely on the basis of psychiatric belief that the truth serum treatment is misnamed, that in fact narcoanalysis is no guarantee of getting at the truth. It may even be used as a coercive threat in case victims are not aware of its limited action.

Still another danger, more closely related to our subject, is that a criminal investigator can induce and communicate his own thoughts and feelings to his victim. Thus the truth serum may cause the patient with a weak ego to yield to the interventionist's synthetically-injected thoughts and interpretations in exactly the same way the victim of hypnosis may take over the suggestions implanted by the hypnotist.

Additionally, this method contains some physical danger. I myself have seen cases of thrombosis develop as a result of intravenous medication of barbiturates.

Experiments with mescaline, which started thirty years ago, are suddenly fashionable again. Aldous Huxley in his recent book, *The Doors of Perception*, described the artificial chemical paradise which he experienced after taking the drug (also known as peyotl). It can stimulate all kinds of pleasant subjective symptoms, but these are, nevertheless, delusional in character. I do not want to start a clinical argument with an author I esteem, yet his own euphoric ecstatic reactions to mescaline are not necessarily the same as those other people experience. Twenty-five years ago I myself experimented with mescaline in order to get a first-hand acquaintance with genuine pathological thoughts; I nearly collapsed as a result. Only a few people have had the ecstatic experiences Huxley describes. Mescaline is dangerous stuff when not used under medical control. And, anyway, why

does Mr. Huxley want to sell artificial heavens?

There is a very serious social danger in all these means of chemical intrusion into the mind. True, they can be used as a careful aid to psychotherapy, but they can also be frightening instruments of control in the hands of men with an overwhelming drive to power. In addition they fortify more than ever in our aspirin age the fiction that we have to use miracle drugs in order to become free-acting agents. The propaganda for chemical elation, for artificial ecstasy and pseudo-Nirvanic experience contains an invitation to men to become chemical dependents, and chemical dependents are weak people who can be made use of by any tyrannical political potentate. The actual propaganda carried on among general practitioners to treat all kinds of anxieties and mental disturbances with new drugs has the same kind of dangerous implications.

Hypnotism and narco-analysis are only two of the current devices that can be misused as instruments of enforced intrusion into the mind. The so-called lie detector, which has already been used as a tool for mental intimidation, is another. This apparatus, useful for psychobiological experimentation, can indicate—through writing down meticulously the changes in the psychogalvanic reflex—that the human guinea pig under investigation reacts more emotionally to certain questions than to others. True, this overreaction may be the reaction to a lie, but it may also be an innocent's reaction to an emotion-laden situation or even to an increased fear of unjust accusation. This experiment only indicates hidden inner turmoil and hidden repressions, with all their doubts and ambiguities. It is not in fact a lie detector although it is used as such. As a matter of fact, the pathological liar and the psychopathic, conscienceless personality show less reaction to this experiment than do normal people. The lie detector is more likely to be a mere tool of coercion in the hands of men who look more for a powerful magic in every instrument than a means of getting at the truth. As a result the innocent can be fooled into false confession.

5. The Therapist as a Possible Instrument of Coercion

Medical therapy and psychotherapy are the subtle sciences of human guidance in periods of physical and emotional stress. Just as training requires the alert, well-aimed participation of both student and teacher, so successful psychotherapy requires the alert, well-aimed participation of both patient and doctor. And just as educational training, under special conditions, can degenerate into coercive taming, so can therapy degenerate into the imposition of the doctor's will on his patient. The doctor himself need not even be conscious that this is happening. This misuse of therapy may show itself in the patient's submission to the doctor's point of view or in the patient's development of excessive dependency on his therapist. Such a dependency and even increased dependency need may extend not only far beyond the usual limits, but may continue even after the therapy has run its course.

I have seen quacks whose only knowledge was where to buy their couches. By calling themselves psychoanalysts they were able to gratify their own need to live other people's lives. Eventually the law will have to establish standards which can keep these dangerous intruders from psychotherapeutic practice. But even the honest, conscientious therapist has a serious moral problem to face. His profession itself continually encourages him, indeed obliges him, to make his patients temporarily dependent on him, and this may appeal to his own need for a sense of importance and power. He must be continually aware of the impact his statements and deductions have on his patients who often listen in awe to the doctor who is for them omnipotent and magic. The therapist must not encourage this submissive attitude in his patients—though in some phases of the treatment it will help the therapy—for good psychotherapy aims towards educating man for freedom and maturity, not for conforming submission.

The practitioners of psychology and psychiatry, are now much more aware of the responsibility their profession imposes on them than they have ever been heretofore. The tools

of psychology are dangerous in the hands of the wrong men. Modern educational methods can be applied in therapy to streamline man's brain and change his opinions so that his thinking conforms with certain ideological systems. Medicine and psychiatry may become more and more involved in political strategy as we have seen in the strategy of brainwashing, and for this reason psychologists and psychiatrists must become more aware of the nature of the scientific tools they use.

The emphasis on therapeutic techniques, on students knowing all the facts and the tricks, the overemphasis on psychotherapeutic diplomas and labels lead actual therapy toward conformism and rationalization of principles that are in contrast to the personal sensitivity needed. Our critical and rational faculty can be a destructive one, destroying or disguising our basic doubts and ambivalences born out of tragic despair—that creator of human sensitivity. The danger of modern psychotherapy (and psychology) is the tendency toward formalizing human intuition and empathy, and toward making an abstraction of emotion and spontaneity. We see a tragic contradiction in the attempt to make a robot out of love and beauty. If this were possible we would find ourselves in a world where there is no inspiration and ecstasy but only cold understanding.

Every human relationship can be used for the wrong or the right aims, and this is especially true of the relationship of subtle unconscious ties which exist between psychotherapist and patient. This statement is equally true for medicine in general; the surgeon too thrives on strong ties with his patients and their willing submission to his cutting techniques. Freud gave us the first clear explanation of what happens in the mind during prolonged mental contact between human beings. He showed that in every intensive human relationship each participant reacts at least partially in terms of the expectations and illusions he developed in his own childhood. As a result prolonged therapy—based on the principle of utter freedom of expression—provides as much opportunity for transference for the doctor as for the patient. If the doctor is not careful, or if he does not understand this mutual transfer of hidden feelings, or if, in his compulsive zest to explain everything, he is too coercive, he may force the patient into acceptance of his point of view, instead of helping him to arrive at his own. This can become mental intrusion of a dangerous kind. Experiences in therapy have taught us that *faulty technique* can give the patient feelings of being bogged down. Sometimes patients feel as if they have to remain living in servile submission to the doctor. I have seen whole families and sects swear by such modern witch doctors.

No wonder that sound psychoanalytic instruction requires the therapist to submit himself for years to the technique he is about to apply to others so that, armed with knowledge of his own unsound unconscious needs he will not try to use his profession to master-mind other people's lives.

Medication into submission is an existing fact. Just as there is a deliberate political brainwashing, so can there be a chemical or suggested mental intrusion. This latter may be less obtrusive, but it is no less dangerous. For man can use his knowledge of the mind of a fellow being not to help him but to hurt him and bog him down. The magician can increase his power by increasing the anxieties and fears of his victim by exploiting his dependency needs and by provoking his feelings of guilt and inferiority.

Medication and medical technique can be used to make man a submissive and conforming being. This we have to keep in mind in order to be able to make him really healthy and free.

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THE EFFECTS OF NON-INTERPRETATION OF DREAMS DURING PSYCHOTHERAPY

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Although the dream is said to be the royal road to the unconscious (3), often in psychotherapy there are reasons to take or make detours from the interpretation of dreams. These points will be discussed below under: 1) the patient's anxiety; 2) the therapist's knowledge and awareness that a detour is necessary; and 3) the patient's "abuse" of dreams.

When the patient is heavily laden with anxiety, he will often continue the interview, after relating a dream, without any interpretation or apparent reference to the dream. No attempt is directly made to alter this course of the interview. If he pauses after relating the dream, then it is best to make no comment for a short period of time. The interview will then proceed. If it does not, then the patient can be told in a friendly manner to continue with the interview. In some cases the patient will go on to interpret the dream. If no active participation in the interpretation or discussion of the dream is undertaken by the therapist, then the patient will rather quickly continue with the material of the interview. These situations in a patient who is heavily laden with anxiety produce non-interpreted dreams during psychotherapy. The effects will be discussed later.

The therapist is often aware that interpretations or dream discussion should be delayed because it would bring about great anxiety even though the patient does not show great anxiety. Thus, these non-interpreted dreams lead in the interview to material which is pertinent and will be discussed. In like manner, dreams often show manifest or latent transference phenomena, and such dream interpretation will be too difficult to handle by patients, especially in the early months of treatment. Those dreams which the therapist knows will raise the patient's resistance or lead to side-tracking interviews can be used in the manner of the non-interpreted dream, as though the patient were heavily laden with anxiety.

Dreams, especially multiple and time-consuming dreams, often may be an "abuse" of therapy. They are manifestations of the patient's resistance (1), or of his impatience for a cure, and of difficult or threatening relationships with the therapist. They are frequently reported without anxiety, or with detached intellectual style, so that soon one realizes that they are being used as an escape from therapy. Sometimes gift-like giving of dreams is bestowed upon the therapist in order to pay the therapist, as it were, for his interest in dreams. In a few instances it comes about because the patient had previous therapy and wants to make a quick, and even lasting, favorable impression. After all, what is more interesting to the interested psychotherapist than a dream, reasons the veteran or seasoned patient. When the method or approach of psychotherapy is unclear to the patient, he may flood the interviews with dreams. Multiple dreams or time-consuming attention to dreams may be used by the patient to ease the anxiety of a difficult situation in the patient's problem areas which he feels he cannot or should not discuss at present. Since all or most of the time-consuming dreams are in the nature of resistance as an "abuse" of therapy, they are not discussed in this paper, even though they are not interpreted, and almost never is their significance conveyed to the patient.

With the above considerations in mind, this study was undertaken to review the effects of the non-interpreted dream during psychotherapy. The aim was to learn and classify, as far as possible, the reactions and associations of patients to their dreams when the dream was not made a focus of interpretation during psychotherapy.

Material of psychotherapy sessions of fifty patients treated during the past three years was studied and evaluated. All patients were personally treated by the writer in the Columbus Receiving Hospital, and 30 continued in therapy as outpatients for varying periods of time. Interviews in which dreams are intro-

duced by the patient were especially selected for the material of this study only when interpretations were not undertaken. If the patient did engage in dream work of any kind relating to interpretation, symbol discussions, or meanings and questions, he was not stopped. However, as mentioned previously, if the patient's anxiety was great, or the dream seemed to be a factor which might introduce heavily laden anxiety, the reaction of the therapist was one of extreme passivity or unconcern to the dream. In this way the patient went on with the interview or, after a pause, was told, in a friendly and sympathetic way, to continue. Dreams were classed as non-interpreted when no direct comment about their meaning was made by patient or therapist; or if any comment was made, it was so brief or casual as not to relate in any direct manner to the dream or its content.

The non-interpreted dream occurred at least once in each of the fifty patients. Although occurring at different stages of therapy and in different ways, it appeared most frequently at beginnings of interview sessions. The effects of the non-interpreted dream produced many similar reactions in different types of patients. In general, these effects were studied under the following headings: 1) Estimation of the patient's anxiety before, during, and after the dream was reported; 2) notation of the immediate next spontaneous remarks of the patient; 3) the first persons mentioned by the patient after the dream was told; 4) the evaluation of the interview material after the dream was reported; 5) comparison with other interviews when dreams were not reported; and 6) the relationship of the patient and the therapist during the interviews.

Discussion of Dream Examples

A. W., a white married female aged 27, had been discharged from the hospital as improved after six weeks of psychotherapy. Upon her return for the first outpatient visit three days later, she began the interview:

"I got along pretty good at home. (Happily)

"But I was awfully tired physically. I'm going through a phase learning to accept my husband. Like yesterday afternoon, and with the children; and I can.

"I had a nap yesterday afternoon, and a dream: I was sent back to the hospital. It was an *awful dream* to me. I woke up and sobbed and cried, then I was relaxing with him (my husband). In the dream I was sent back to the hospital because I couldn't make it, out there—you see, I was shorter—no doctors or nurses or aides around. I was smaller, like I was age nine or so. They didn't tell the patients what to do. Some patients wanted sexual intercourse with their husbands or wives. And I was so unimportant. Why, nobody paid any attention to me.

"I woke up, and I was so upset. I told my husband —I didn't want to come back to the hospital, it's just that way—I felt—I didn't want to feel ever like coming back—I felt sort of—well, I just don't understand it.

"You know, I haven't felt like playing with my children. I haven't been in a gay mood. I just feel dopey."

This dream was accompanied by great anxiety and is characteristic of the first group of patients who relate dreams with so much anxiety that interpretation would disturb the situation even more.

Beginning with her first remarks after the dream, the patient is telling her husband that she did not want to return to the hospital and then telling the therapist (in spite of treatment and admitted improvement) that her difficulties with her children still plague her. The meanings of the dream are present throughout the whole interview. The patient is narrating to the therapist that she is waiting for the decisions of too many people, and that she wants to go on from where she believes she is fixated, at the age of nine. Her remarks about patients wanting sexual intercourse with husbands and wives indicate a desire for understanding which she feels can come with outpatient therapy. The patient does not wish to return to the hospital and is pointing out to the therapist that she feels unimportant because nobody, including the therapist, pays any attention to her feeling immature, as though she were only nine years of age and unable to make her own decisions. She reinforces the idea many times during the interview that it would be better for people to let her mature rather than to have any preconceived notions about her, and jump in each time to make up her mind for her, especially in regard to her children and husband.

In applying the method of our study to this non-interpreted dream and its effect in therapy, the following inferences are drawn. Although interpretation and dream work were not entered into, the dream material expresses the

patient's conflicts as she views them since she left the hospital a short time previously. Although great anxiety was present during the reporting of the dream, the ventilation, with permissive non-interpretation, gave a great deal of comfort to the patient and permitted her to master the situation with little anxiety for the present. The patient's remarks immediately following the dream indicate that she is continuing to talk about the dream, and the next persons mentioned relate directly to the dream, even though neither husband nor therapist appears in the dream. The interview content was directly related to the dream and, compared to previous or succeeding interviews, did not cause the patient to stop dreaming, but was a factor in promoting the relationship between patient and therapist.

M. K., a 32-year-old white single female, had left the hospital during the previous week, after a stormy course. She had felt abandoned by a previous therapist. She presented many severe phobias, obsessions, and compulsions; but her six weeks' hospital stay was primarily her struggle in changing therapists.

The patient entered briskly and said:

"You're all ready—for me to go—I feel better.

"I dreamed last night about you (very jovially). You were seated down in the lobby, seated deeply in a very soft chair there. There was some man there. He said, 'Send 'em on up. Send 'em on up upstairs.' I did. (Laughed heartily.) Anyhow, that's what he did, and what I did, and you were so relaxed about it all, sitting deeply in that chair.

"Yes, things are better. I eat well, sleep better.

"But it was strange. You said last time I hadn't accepted being in the hospital, and I guess I hadn't. I see now. And after one of the worst days and nights after being here, the next day I was well and composed, so that I think I will go back to work part-time."

The patient then complained that the phobias and obsessions still troubled her, and she felt that the previous treatment dealt with them more directly. For the first time, the patient then outlined her strivings for normalcy in sex, femininity, and marriage, subjects which had previously been taboo for her. Thus the anxiety which would have been aroused by dream interpretation, relating most likely to change of therapists, was not stimulated, and the patient in her own way felt comfortable enough to go on with important therapeutic work.

R. G., a 35-year-old white married father of two girls, was very passive in therapy and always wished the therapist to ask questions so that he could know what to say. In the interview, the patient related a dream which was not interpreted, and although he showed little anxiety, he was working through a transference problem and exploring further his main conflicts.

The patient states that he felt pretty good, that he got to bed at midnight, but he was awakened at 2 a.m. by the fellow in Special Care. Yet those two hours were the best sleep—in fact, he felt better than when he got up this morning.

A few days ago he had a dream which he now recalls:

"My wife, my mother and myself, we were involved, we were sitting on blankets. My wife and I were standing up for each other and defending ourselves against the attitude—my mother's attitude.

"Well, oh, I think last night this thing got more clear than any other time. The attitude here, and the constant talks we've had. I'm ashamed of the aggressive attitude I have had, and I resented the natural defense you have had to show.

"Maybe it's sickness, as I look back on the whole thing. From the time that I was very small. The attitude that I wanted to do things to punish her. I've often felt that I wish I weren't born. And that, as I look back at it, it's my way of showing the resentment to my mother of being born.

"Oftentimes it comes up in my mind to punish my mother for having borne me into this world. My attitude to her and her domineering of me is a good example. I thought of it last night, consciously or subconsciously. For example, when I went to Europe, her letters. I dropped everything at the top where I was—England, France, etc.—and never picked it up at home. They would write to me complaining that I left it out. I think you can see the point there. Many of the things are probably due to the things she said to me.

"Now I love to dance. We weren't encouraged to mix with girls, though. The first date I had to take that girl past my house, I told you. I imagine there's many similar related things in my life along that line. And right now I have this feeling: that the same pattern in my mother, that I am trying to give my wife a rough time, and testing all the time to see if my wife loves me. I know I certainly love my wife. I know she has kept my wife upset, too.

"I don't know of anything else right now, doctor. Raise some points and we'll discuss it. I want to stop being offensive and aggressive. It's ridiculous."

This stimulus to the therapy later in the interview led the patient to discuss for the

first time his difficulties in socialization. He concluded the interview with:

"See, I'm trying to show you the conflict I have getting into groups. Even way back in high school, I've had that. Well, do you see what I'm trying to show you, how this conflict is within me, and how it stops me from getting on and getting along?"

L. M. M., a 30-year-old white female, was in therapy for three months. She had many difficulties with her feelings about her husband, three children, and her attitudes about therapy. She often stated that the therapy made no sense to her.

In this interview the patient showed indifference and very little anxiety until she had finished relating her dream. About midway in the session the patient stated:

"Another dream last night: I vaguely remember mother and I were shopping. My husband was in the dream, and another doctor—Cross—I think Dr. Cross. He said I lied about something—I don't remember what.

(Pause.) "I was talking with Mrs. M. and Miss B., and we all said, let's all tell the doctor a dream about a bat, and we'd all try to fool you and see what you would say about it. I said I didn't know if I'd tell you about it, because it was all in fun.

"I keep thinking maybe my husband can help somehow. I've got to try to help myself. I'm trying, and everything seems to go along, and from so long ago.

"I have such a difficult time remembering things from day to day. I still feel that I have the mentality of a child. I can't seem to put it across. (Note: Cross, Dr. Cross, and the dream, a cross.)

"I'm *honest*—I'm honest in saying that I just never matured, somehow. Oh, I want to feel well so badly, I want to be home with my family. I know I'm not well. I know it isn't fair to see my children (cries and sobs), 'cause I'm not well enough."

Thus, enough latent content and consequent anxiety were produced by reporting the dream material in this instance so that it would have been too anxiety-creating to insist on additional dream work. When dream interpretation is not fostered, associative material in the process of verbalization will often be meaningful. In this instance the patient was troubled by not being able to put across her dream, her problems, and to work out her relationship with the therapist, whom she called Dr. Cross.

G. J. W., a 40-year-old white single female, was leaving the hospital in a few days. Her difficulty in the past two weeks, following a reactive depression, was to decide her future course. The patient was fidgety as she entered therapy this day.

"I had a dream: About my father. I thought we were putting him in the deep freeze, like ice cream. That's all.

"I called on the telephone to my brother, Charles, to tell them that I'm coming home. See, mother had a ruckus with Marvin, too, anticipating his nastiness, as it were. Charles is taking a trailer. I wrote to him. On my other calls I was unsuccessful.

"Mrs. H. has written about her coming over this week, but we're not going to Cincinnati.

"Is is safe for me to go alone? Can I ride in an automobile? Am I able to go?

"I'll be close to everybody I'm meeting. The only thing I was concerned about is getting sick on the bus. You think I can go?"

This type of reaction to a dream, in which the patient says, "That's all," or some similar statement, has been reported by Feldman (2). He states that the patient means to dismiss the dream in this way, but that by so doing and saying, he is showing that the whole story is right there. And indeed, in this example the story was there, for the patient had apparently decided in the above dream to leave the hospital, thus putting the therapist in a deep freeze, like ice cream, to be taken on an outpatient basis.

General Discussion

Examples of non-interpreted dreams during psychotherapy were given, and the effects were discussed. In all instances, the dream remains a focus of activity of the interview, whether anxiety was great before, during, or immediately after reporting the dream. This anxiety seems to be a driving force for the patients to look deeper into their problems and conflicts, or to seek ways of further working through their relationships with the therapist, or both. Sometimes it seems that the problem or conflict is uppermost; at other times, that the relationship with the therapist is of greater importance. But to make a fine dividing line in this effect would be to narrow the nature of the anxiety or dim the perspectives of the relationship. Similarly, to attempt merely to interpret the dream or to see how much can be learned of its meaning from the total content of the interview would place too much stress on symbols, and not enough on affect. Nevertheless, it is remarkable in how many instances the next persons mentioned after dream re-

porting are connected with the latent dream content. It is also striking, in reviewing the possible meaning of dreams that are not interpreted, how many remarks by the patient concern the dream, so that in many instances the dream becomes meaningful not because of dream interpretation, but because of the patient's subsequent spontaneous verbalizations, ventilation, and remarks under the stimulus of dream anxiety. Having reported the dream, the patient is primarily motivated by a curious or driving anxiety. While he may proceed with intensity because of some thought association, he is in no direct way motivated by the direct reference of the therapist to the manifest or latent content in the dream material. Still, he seems driven to uncover material related to the dream, without awareness that he is doing this. Dream meanings (4) have been classed as the repressed striving of wish-fulfillment, anxiety, or fear situations that have been repressed, or the repetitive dreams of insight and transference. The material uncovered during interviews with a non-interpreted dream, although not as intellectually or as symbolically directly related to the dream, has in its context an affective relation to the situation which makes its value very important for the process of psychotherapy.

Thus, the patient will often attempt to delve into hitherto resistant areas more freely, or will summarize his progress, or outline his problems and even give a résumé of insights obtained. To the therapist he will often open up new horizons in the relationship and stimulate more progress in psychotherapy.

With some patients, non-interpretation of dreams is the procedure of choice. Generally these patients are the type who are seen and treated in a hospital setting. Because the supportive elements of therapy are primarily used with these patients, and their ego needs are so great, dream interpretation would shatter even more their weakened defenses (5). Proper utilization of therapy would, therefore, minimize or pass over dream interpretation in this group of patients, but an awareness of the focus of activity generated by the non-interpreted dream aids the therapist in realizing that movement is occurring in the direction of furthering the relationship between patient and therapist, and that highlights and meanings of the conflicts are still being discussed. If one compares interviews containing dreams which were interpreted with those with non-interpretation of dreams in the same patient, then it is noted that the difference is not great. There may be greater intellectual insight with dream interpretation, but there are also greater problems of resistance and understanding which arise between the patient and the therapist. When patients introduce recurrent dreams of one theme into therapy, these have the force of great meaning to the patients. However, their early interpretation is usually too charged with resistance or ego-threats and danger because they do have so much threatening meaning to the patient's present defenses in his basic conflicts. Similarly, early in therapy, dreams often show the first meanings of transference or how the patient views the therapist and the therapy hour. If these were interpreted, anxiety and resistance would be too great; hence it is best to listen to the early dream with the effects described as being produced by the non-interpreted dream.

One cannot say categorically what should be the treatment procedure with dreams. However, the type of relationship developing between the patient and the therapist should be the main determinant. Routine approach to all material of dreams is bound to lead to stereotyped attitudes not only in the patient but also in the therapist. What can be said, however, is that the introduction of dreams into therapy is not a signal for interpretation or non-interpretation. The therapist must evaluate the anxiety of the patient, his ego needs and self-esteem, and the extent of the relationship or transference. In this way the dream will be important for psychotherapy, whether interpreted or not interpreted.

Finally, this study does not mean that dream interpretation should not be utilized; nor does it indicate that non-interpretation of dreams stifles therapy or makes interpretation of dreams a procedure which has been by-passed. It does, however, emphasize that the non-interpreted dream is a focus of activity for the patient and therapist in any given interview situation. When note is made of the immediate next persons and next associations spontaneously mentioned by the patient, and when the relationship of the therapist with the pa-

tient to the material in the dream is correlated with the content of the whole interview, then valuable clues are obtained which shed more light on the psychotherapeutic process.

Summary

This study was undertaken to learn the reactions and associations of patients to their dreams when the dream was not made a focus of interpretation. Material of psychotherapy sessions of 50 patients treated during the past three years was evaluated. Examples of dreams, patient's next remark, and the remainder of the interview are examined and discussed. The relationship of anxiety to the dream, to the interview, and the interaction with the therapist are evaluated. The findings suggest that the non-interpreted dream can be a very important aid for understanding the patient's conflicts and for yielding clues about the progress of psychotherapy.

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THE OTHELLO SYNDROME

A Study in the Psychopathology of Sexual Jealousy

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"O, beware, my lord, of jealousy;
It is the green-eyed monster which doth mock
The meat it feeds on."

There is a dangerous form of psychosis which may be called the "Othello syndrome" as its central theme consists in a delusional belief in infidelity of the spouse. It is highly significant that the jealousy-motif has been singled out for special study by such subtle students of human psychology as Boccaccio, Shakespeare, and Tolstoy. These writers have between them described the natural history of sexual jealousy with singular brilliance and poignancy. For these writers, the cardinal anatomy of the jealousy situation has consisted in an "eternal triangle" constructed from the classical trio—the husband, the wife, and the "other man." In Boccaccio's *Ninth Novel of the Second Day*, the essential trio consists in Bernabo, Zinevra (wife to Bernabo), and Piacenza; in Shakespeare's *Othello*, it consists in Othello, Desdemona (wife to Othello), and Cassio; and in Tolstoy's *The Kreutzer Sonata*, it consists in Pozdnyshev, Madam Pozdnyshev, and Trukhachevski.

The emotion of jealousy, which in Gillard's (4) words, "turns homes that might be sanctuaries of love into hells of discord and hate," must be of profound interest to the alienist, who so often encounters delusions of infidelity in the course of his work. These delusions may occasionally appear in the comparatively pure form which characterizes Kraepelin's "True Paranoia", but they appear more frequently in the course of other functional psychoses such as paranoid condition, paranoid schizophrenia, and cyclophrenia. They may also complicate the course of epilepsy and figure conspicuously in the psychoses associated with senility and chronic alcoholism.

Delusions of infidelity are deserving of special and separate consideration because they tend to dominate the picture in, and give a specific character to, the parent psychosis; because they differ materially in their psychopathology from paranoid delusions in general; and because they occupy a unique position in that they necessarily implicate the sexual partner. Delusions of infidelity affect *both* sexes, but the incidence is appreciably higher and infinitely more dangerous in male subjects. The series of cases about to be described is deliberately selected from a larger number in order to illustrate the salient features and extensive ramifications of the "Othello" psychosis.

Case 1: A married man, 30 years old, was first seen at a psychiatric clinic in October, 1949, with the symptoms and signs of an anxiety state. During the interview, he stated that he had been troubled by a recurrent suspicion that his wife was misconducting herself with other men. This doubt greatly disturbed his peace of mind although he admitted that there was not a shred of supporting evidence. Moreover, he confessed that he realized his suspicions were of an illusory nature. Nevertheless, any adult male with whom his wife came into contact was liable to become the object of suspicion. Even her brother and brother-in-law had been suspected of being her lovers. At times, he found it difficult to concentrate on his work at the factory because of the fear that his wife might be disporting herself with a lover.

Background features. The patient's symptoms had begun shortly after he had returned from serving with the British Army in Germany. He admitted misconduct with a German girl and stated that he dared not tell his wife for fear that it might "put ideas into her head." His symptoms were increased by a diminution in his wife's desire for sexual intercourse, which caused him to suspect that she might be obtaining satisfaction elsewhere. His father had suffered from a manic-depressive psychosis of long duration and had been markedly jealous in the sexual sphere. The patient was a virile man of sober habits.

Progress. During the five years he has been under observation as an out-patient he has retained a considerable degree of insight into his condition. As a result, his wife has suffered no physical violence at his hands; nevertheless, the happiness of the family has been bedevilled by the patient's agony of doubt in respect of his wife's chastity.

Diagnosis. True paranoia with delusions of infidelity.

Case 2: A married man, 43 years old, was first admitted to a mental hospital in June, 1951. He complained of feeling "tensed up" as a result of the belief that his wife was unfaithful to him. Careful

enquiries showed that there was not a scrap of evidence to support his suspicions, which began when a workmate allegedly asked him whether he had ever suspected his wife of having an affair with another man. His suspicions increased considerably when one day she failed to give what he deemed to be a satisfactory explanation for the origin of a smart pair of bootees in her possession. After a short stay he was discharged from hospital, only to be readmitted on two further occasions as a result of breaches of the peace connected with his delusions of jealousy. Once, he attempted to strangle his wife but was stopped in the nick of time by the intervention of neighbors. Another time, he rushed scantily clad from the house in a fruitless attempt to catch his wife with a paramour.

Background features. The patient's suspicions were intermittent in character and were closely related to bouts of drinking (he was not, however, a chronic alcoholic). There were long intervals during which he proved to be a kindly husband and good father. His symptoms had started shortly after his wife's libidinal interest had declined following a hysterectomy operation. The family history was notable for the fact that a twin (identical) brother had suffered from grand mal epilepsy and had committed suicide; moreover, a brother and a sister had shown evidence of sexual jealousy in their relations with their own respective spouses. This patient's electroencephalogram was epileptic in character, but he had never had an overt fit. His wife's morality was above suspicion.

Progress. During the last two years, he has not been readmitted to hospital. It is believed that his delusions of jealousy are at present in abeyance.

Diagnosis. Epilepsy with delusions of infidelity.

Case 3: A married man, 49 years old, was first admitted to a mental hospital in July, 1952. He complained of chronic anxiety arising from a belief that his wife was "carrying on" with a number of men. He admitted that his suspicions were inconstant in their intensity, waxing and waning from week to week. He alleged that he had heard neighbors whispering about him, and scheming to facilitate his wife's infidelity. At times, his behavior had been distinctly bizarre. Thus, he had thrown stones at the windows of the factory where his wife worked as a cleaner. One day, when searching her handbag for "evidence", he had chanced upon a discarded pair of knickers which she had pressed into service as a duster. He insisted that the dilapidated and soiled condition of the garment proved beyond doubt that she had been her employer's mistress. He had, on several occasions, attempted to strangle his wife as a result of his delusions.

Background features. The patient's attacks of morbid jealousy were worse at week-ends when he drank a lot of beer. He had always been rather more jealous than the average man. However, the earliest evidence of what may be called "psychotic" jealousy stems from an incident which occurred 12 years before his delusions of infidelity became firmly established. On this occasion, he violently attacked his wife's young brother (aged 17 years) because he suspected the boy of incestuous designs on his own sister. The delusions of jealousy became established soon after his wife had suffered a spontaneous diminution in her desire for sexual intercourse.

Progress. This patient had been in hospital only two weeks when he insisted on exercising his right to leave hospital (he was a voluntary patient). He was, however, readmitted as a certified patient in February, 1953, and was ultimately discharged on the application of his wife in the following December. She had taken certain measures to safeguard herself from physical violence, and these were reinforced by her 17-year-old son's insistence on occupying his parents' bedroom. During the 16 months that have elapsed since he left hospital, his delusions have shown signs of gradual abatement. However, he still shadows his wife when she is out shopping, and surreptitiously watches from a window when she walks down the street.

Diagnosis. Paranoid schizophrenia with delusions of infidelity.

Case 4: A married man, 34 years old, was admitted to a mental hospital after having seized his wife by the throat in an attempt to extract from her a confession of infidelity. He had taken a few drinks before the assault but was not obviously drunk at the time. When interviewed, he stated that his mental calm had recently been disturbed by a suspicion that his wife was having an affair with a "Yank". For several months, she had been sleeping with her 13-months-old infant in a separate room as the child tended to cry when not with its mother. Once, when the patient thought he heard his wife whispering to her American lover, he burst into the bedroom with the intention of trapping the guilty pair, but to his astonishment he found his wife alone in bed. He admitted that he had no concrete reasons for his suspicions, never having seen his wife in the company of another man.

Background features. The patient, a virile man, had always been prone to jealousy in the sexual sphere. Nevertheless, there had been no serious trouble until his wife began to discourage sexual intercourse after the birth of the infant. As a result, he began to suspect that she might have a lover. Furthermore, his parents-in-law had recently come to live in his home. He resented their presence, feeling that his wife neglected him to look after her parents. In consequence of this resentment, he had taken to drinking of an evening in the local tavern. Even so, he stoutly denied that he drank to excess. The patient has a brother with a proclivity to morbid sexual jealousy. The wife, whose morals were beyond reproach, admitted that she had recently discouraged her husband's advances as she was afraid of becoming pregnant. Her fear of pregnancy arose from the fact that her last confinement had been complicated, with the result that Caesarean section had been necessary.

Progress. This patient soon returned home, having regained confidence in his wife. His grievances were removed, and, on his part, he renounced his recently acquired habit of drinking. During the eight months that have elapsed since his discharge from hospital, he has lived harmoniously with his wife and family.

Diagnosis. Paranoid condition with delusions of infidelity.

Case 5: A married man, 35 years old, was admitted to hospital as a result of delusions respecting his wife's fidelity. Eighteen months before admission he began to accuse her of flirting with the local tradesmen. During the previous six months, he had become very restless at night, asserting that he could hear the window pane being tapped, and the noise of a car being driven away from outside his house. He would often leave home during the night in search of an "intruder" whom he thought he could hear prowling about outside. Finally, he accused his wife of having a group of lovers, and asserted that the noises he could hear at night were signals from her paramours. One night, he sprang out of bed and rushed to the window in an attempt to catch a man he thought he saw in the bedroom. Since the onset of his illness he had repeatedly remarked on a fancied lack of resemblance of his children to himself or his wife. On one occasion, he had mistaken the singing of birds in the trees for the whistling of her men friends. Shortly before admission, he had awakened his wife in the middle of the night and exhorted her to confess that she had a lover.

Background features. The patient was a virile man, who had always been prone to sexual jealousy. He had been unfaithful to his wife when serving with the British Army in Germany. He felt very guilty about this moral lapse and had carefully concealed his infidelity from his wife. In 1946, he had accused the neighbors of deliberately trying to annoy him by tapping on the wall at night. At one time, his mother harbored unfounded suspicions concerning her husband's fidelity. The patient's habits were sober.

Progress. After a few weeks sojourn in hospital, his wife applied for his discharge. While in hospital, he had become increasingly evasive and reticent on the subject of his delusions, realizing, no doubt, that they constituted an impediment to his release. However, a letter received from him eight months after his discharge from hospital showed that he had regained full insight and was once again living happily with his wife.

Diagnosis. Paranoid schizophrenia with delusions of infidelity.

Case 6: A married man, 38 years old, was admitted to hospital in a state of severe depression colored with anxiety. He attributed his symptoms, which were of a recurrent nature, to a haunting suspicion concerning the fidelity of his wife and the paternity of his children. These paroxysms of jealousy caused his wife much chagrin and bitterness. The bouts of depression were also accompanied by hypochondriacal fears, and by a feeling that people were ill-disposed towards him.

Background features. The delusions of jealousy had first made their appearance at a time when the wife was inclined to reject her husband's advances. The family was then in importunate circumstances and was obliged to live under cramped conditions in a Nissen hut. As a result, there was insufficient room to ensure adequate isolation of the nuptial bed from the couple's young family. It was for this reason that the wife discouraged sexual intercourse. The patient noticed a parallel relationship between his depression and his sexual jealousy; his wife noticed a sharp increase in his consumption of beer coincident with his bouts of jealousy. The patient's sister had had a psychotic episode in which hypochondriacal delusions were prominent. His wife was a chaste woman and affectionate mother.

Progress. He left hospital a few weeks after admission having received a short course of electro-shock therapy, which removed both his depression and delusions of infidelity. However, follow-up studies two years after his discharge from hospital showed that he was still liable to phases of sexual jealousy.

Diagnosis. Manic-depressive psychosis with delusions of infidelity.

Case 7: A married man, 39 years old, was admitted to a mental hospital in May, 1951, as the direct result of disorderly behavior arising from delusions concerning his wife's fidelity. During the previous year, he had rendered his wife (a virtuous woman) miserable by repeatedly accusing her of infidelity on an enormous scale. He would use field glasses to spy on her from afar, and, after pretending to leave the house, he was wont to re-enter surreptitiously in an attempt to trap her with a lover. Furthermore, he would search the house with meticulous care for evidence of her infidelity, and tax his children with aiding and abetting their mother in her lechery. He threatened several men in the neighborhood with violence because he suspected them of a liaison with his wife, and developed a sinister habit of going abroad with an open razor in his pocket. He often expressed regret that he could not make his wife perpetually pregnant to keep her "fully occupied," and spent half the night attempting to assuage (by one means or another) the insatiable lust with which he thought she was consumed. Moreover, he frequently threatened her with violence and once seized her by the throat.

Background features. Since the onset of his psychosis, he had had three nocturnal epileptic fits. Throughout his married life he had shown himself to be unusually jealous, but in other respects he had been a good husband and father. He did not drink to excess. His wife's sexual appetite was normal. His father, a drunkard and libertine, had rendered his wife pregnant on 28 occasions; in addition, he had many extramarital affairs. He is said to have attempted intercourse with his epileptic daughter when she was in the process of recovery from a fit. He harbored delusions of infidelity, and questioned without reason the paternity of his children. The patient's elder brother was described by his wife as "unfit to be trusted with a dog, never mind a woman." His younger brother, a drunkard, became sexually impotent and subject to delusions of jealousy against his wife.

Progress. A course of electro-shock therapy served to lessen this patient's tension but failed to remove his delusions of infidelity. After 13 months in hospital, he was released at his wife's request, only to be readmitted 11 months later. Four years after the onset of his psychosis, he remains in hospital, a prey to his delusions of infidelity.

Diagnosis. Epilepsy with delusions of infidelity.

Case 8: A married woman, 32 years old, was interviewed at a psychiatric clinic in July, 1954. She was

in a state of tension and anxiety because of a conviction that her husband was unfaithful to her. She stated that since the birth of her second child five months earlier, she had become increasingly certain that her husband was having affairs with other women. She admitted that she had not accepted his denials, and that she followed him about the streets. She mentioned as "proofs" of his misconduct the fact that the newspapers he brought home were creased in "a certain way." Furthermore, she alleged that her husband had been a lukewarm and unskilful lover prior to her recent pregnancy, but that on resumption of coitus he had shown himself to be an expert in the art of love. She regarded this as incontrovertible evidence that he had obtained some practical instruction from a courtesan. A sister, with whom she had been living shortly before her arrival at the Clinic, stated that the patient examined her husband from head to foot when he came home from work and insisted that he received messages hidden behind postage stamps.

Background features. This patient made no secret of the fact that her sexual appetite was much keener than that of her husband. She had been unfaithful to him some years previously, but had been so smitten with guilt that she had confessed to her husband on the following day. There was no family history of sexual jealousy.

Progress. The patient began a course of electro-convulsive therapy, but after four treatments she became euphoric and insisted on taking her discharge. Her delusions persisted in a minor degree as, at the time of her discharge, she said that her husband "could do as he liked" and she would no longer pry into his affairs. When interviewed one year later, she had relapsed to some extent. She was tense and admitted to being suspicious of her husband whom she accused of being cold and lacking in affection towards her. Nevertheless, she no longer followed him about, and they quarreled less frequently than before.

Diagnosis. Paranoid condition with delusions of infidelity.

Case 9: A married woman, 49 years old, reported to a psychiatric clinic in April, 1955, complaining of grand mal epilepsy and anxiety engendered by the alleged infidelity of her husband. She had left him in 1947 when she discovered that he was unfaithful to her. She returned to him after an absence of two years "for the sake of my boy." Soon after rejoining her husband, she began to accuse him of associating with a number of strange women and spent much of her time searching grates for burned letters, shadowing her husband about the streets, and watching his behavior at public whist-drives. According to her husband she even inspected his shirts for evidence of sexual activities. The husband admitted that he had been unfaithful to his wife in 1947, but denied vehemently that his offence had been repeated after his wife had returned to him. The patient grudgingly admitted that her zealous detective work had not unearthed any tangible evidence in support of her suspicions. Her epilepsy had started when she was 9 years of age, but the seizures were few and far between.

Background features. The significant features in this case, apart from the epilepsy, were the infidelity of the husband in 1947 and the patient's age (42 years) at the time of her return to her husband. There was no family history of sexual jealousy. The patient's habits were temperate.

Progress. Insufficient time has elapsed to report the progress of this case.

Discussion

The psycho-pathology of the Othello syndrome

(A) *General considerations.* A heredo-familial and constitutional tendency to sexual jealousy is apparent in a high proportion of cases displaying the Othello psychosis (see cases 1, 2, 4, 5, 7). The hereditary factor is exemplified *par excellence* in the following case:

A girl aged 20 years was admitted to hospital following an attempted suicide by barbiturate poisoning, committed while she was under the erroneous impression that her lover had been unfaithful to her. Three years earlier, she had been treated by a psychoanalyst for a persecutory delusional state in which she had imagined that four people (one of whom was her mother) were trying to poison her. The family history revealed that her father, who was a chronic alcoholic, had been tormented with delusions regarding his wife's infidelity for the last 10 years of his life. At times he had been violent, and on several occasions the patient's mother had been forced to lock him in the garage or other parts of the house for her own safety. Although his delusions were fixed and constant, they became florid when he was under the influence of alcohol. He frequently accused his wife of meeting a lover when she had in fact been out shopping with her two daughters. The parents eventually divorced. About nine months before the daughter was admitted to hospital, her mother died from carcinoma of the breast. During his wife's last illness her husband had been most attentive, and a few weeks after her death he committed suicide by carbon monoxide poisoning.

That Shakespeare was well aware of a constitutional factor in the etiology of jealousy is at once apparent from Desdemona's heart-rending protest: "Alas the day, I never gave him cause!," and Emelia's significant rejoinder:

> "But jealous souls will not be answer'd so;
> They are not ever jealous for the cause,
> But jealous for they are jealous: 'tis a monster
> Begot upon itself, born on itself."

It is a matter of common observation that an elderly husband married to a young wife falls an easy prey to jealousy. Burton (*The Anatomy of Melancholy*) has this to say of old men wedded to young women: "with old doting

Janivere in Chaucer, they begin to mistrust all is not well:

> She was young and he was old,
> And therefore he feared to be a cuckold."

At this point, it would seem fitting to mention *en passant* a case where a woman's morbid rumination over her *age* paved the way for the advent of delusions of jealousy. Several years before the onset of her delusions, she had been mortified to hear her husband (who was of her own age) express the opinion that men do well to marry women much younger than themselves. With the approach of the menopause, she became obsessed with the notion that her husband was bent on the seduction of every *young* woman with whom he came into contact.

The *plain* wife is likewise vulnerable to the pangs of jealousy. Oscar Wilde in *A Woman of No Importance* illustrates the point as follows: "Curious thing, plain women are always jealous of their husbands, beautiful women never are!"

There is evidence that the promiscuous husband may ultimately suffer for his Don Juan activities by developing delusions of infidelity, which result from the projection of his illicit desires and feelings of guilt on to his wife (see cases 1, 5, 8). Moreover, his very success as the seducer of other men's wives may raise doubts in his mind about the chastity of his own wife and the morals of his fellow men. Burton (*The Anatomy of Melancholy*) drives home this point with a pertinent verse:

> "There is none jealous, I durst pawn my life,
> But he that hath defiled another's wife,
> And for that he himself hath gone astray,
> He straightway thinks his wife will tread that way."

It is noteworthy that Tolstoy in *The Kreutzer Sonata* is at pains to stress the pre-marital promiscuity of the insanely jealous Pozdnyshev, who suspects the music master Trukhachevski of the same lasciviousness and moral turpitude which he himself displayed as a bachelor—"He (Trukhachevski) is what all men are, what I was when a bachelor. For him it is a pleasure. He even smiles when he looks at me as though saying: 'What can you say about it? It is my turn now!'"

Furthermore, the spouse who is actually *detected* in adultery by his (or her) partner may *subsequently* become the victim of groundless suspicions (see case 9). This state of affairs is illustrated by the case of a young man who developed delusions of jealousy after his wife had confessed to a single, unpremeditated act of infidelity. Thereafter, whenever his wife went out alone, he felt impelled to trail her through the streets to reassure himself that she was not keeping an assignation with a lover. One evening, some two and a half years after his wife's confession, he swallowed 36 grains of amylobarbitone after remarking (to his wife), "I know you want to get rid of me."

(B) *Specific considerations.* Noyes (6) stresses the importance of *impotence* in the psychopathology of morbid sexual jealousy, "Impotence is not infrequently a contributory if not the principal factor, leading to depressive paranoid reactions in the form of jealousy or of delusions of infidelity." Bleuler (1), when discussing the psychopathology of delusions of infidelity in schizophrenia, also stresses the dynamic role of impotence in the psychogenesis of these delusions. He argues that they are unconsciously developed to protect the impotent male from the humiliation of having to disclose his state of emasculation. Campbell (2) offers a similar explanation for delusions of infidelity arising in the depressive phase of the manic-depressive psychosis. He believes that the relative frigidity (or impotence), which develops during the depressive attack, serves to reinforce the feeling of inferiority and rejection present from the inception of the psychosis. Delusions of infidelity subsequently emerge as a result of successive rationalizations. In the case of the husband (Campbell refers to the wife), these rationalizations assume some such form as—"Because of my impotence, my wife must be losing interest in me;" followed by "She must therefore be transferring her affections to other men." The masochistic rationalization of depression is well-illustrated in case 6 of this paper. The patient, after describing his feelings when in a phase of depression, goes on to explain the origin of his delusions of jealousy—"Whenever any of my friends, or even my own children spoke to me, I immediately burst into tears. It seemed as if the tears must come, and I had to find something bad enough in my own family life to warrant those outbursts. I sorted out all the things most dear to me—*the fidelity of my wife*,

even scanning my children's faces and photographs so that I could call my wife out." From what has been said, the impotence of the chronic alcoholic explains his proclivity to sexual jealousy. This impotence is directly attributable to the toxic effects of alcohol on the nervous and endocrine mechanisms subserving the conjugal reflex. However, a *latent homosexuality* not infrequently produces a *psychogenic impotence* in these subjects. Whatever the cause, the alcoholic's impotence sets in motion the psychological mechanisms which lead to the appearance of delusions of jealousy. The paramount importance of impotence in the psychopathology of the Othello psychosis is further emphasized by the fact that impotence of diabetic or tabetic origin is also liable to be followed by the appearance of delusions of infidelity (7).

Mayer-Gross *et al.* (5) have drawn attention to another mechanism whereby delusions of infidelity may arise in the mind of the chronic alcoholic at a comparatively early stage (before the appearance of impotence). For instance, the wife may come to reject the nauseating advances of her drunken husband, thereby implanting in his mind the suspicion that she is obtaining sexual satisfaction elsewhere. This particular mechanism—a waning of the wife's interest in sexual intercourse being misinterpreted as proof of infidelity by the husband—can be discerned in several of the cases recorded in this paper although the subjects concerned were not in the strict sense chronic alcoholics (see cases 1, 2, 3, 4, 6). That a similar mechanism may engender delusions of infidelity in the *wife* is demonstrated by the following case:

A 42-year-old innkeeper, who had suffered from impotence of eight months duration, complained that his disability was causing a serious rift between himself and his wife. The latter, displeased by his inability to afford her sexual satisfaction, had grown increasingly irritable. In addition, she had begun to hint that he was having an affair with another woman.

In general, the cases cited in this paper lead to the conclusion that a *marked disparity in the sexuality of married partners is a* potent factor in the psychogenesis of delusions of infidelity. Moreover, such disparity seems to render the two partners *equally* vulnerable to delusions of jealousy.

Williams (8) has remarked on an association between attacks of jealousy and temporal lobe epilepsy. In this connection, it is noteworthy that three of the cases described in this paper were suffering from epilepsy (see cases 2, 7, 9). In addition, the following case concerned an epileptic woman:

The patient's husband had received a solicitor's letter demanding a written denial of his wife's allegations that a certain married woman was his mistress, and an assurance that he would arrange for his wife to see a doctor. On being interviewed, the patient claimed that for the last five years her husband had made no secret of the fact that he had several mistresses. Moreover, she asserted that he brought some of these women home in her absence. She claimed that she had found the bed disarranged in a suspicious manner when returning home from work one day. On another occasion, she found a piece of wood hacked from the bedstead. On yet another occasion, she found sequins scattered over the floor of the bedroom and a pearl missing from a necklace. She admitted that she had never caught her husband red-handed, despite his allegedly daring behavior in introducing his lovers to the marital bedroom.

It seems probable that this patient has phases of epileptic automatism during which she disarranges the articles in her bedroom, and thereafter misinterprets the situation to the detriment of her husband.

On the whole, the psychopathology of the Othello syndrome is similar in the two sexes. Nevertheless, there are certain aspects of the problem which are peculiar to the female sex. For instance, ideas of infidelity sometimes arise in association with pregnancy, the puerperium, or the menopause. At these times, a woman is often aware of a decline in her desire for sexual intercourse (paradoxically, the reverse may be true!). Furthermore, she is conscious of being at a biological disadvantage in respect of her physical attractiveness. As a result, she feels insecure and develops the fear that her mate may turn to a rival for sexual satisfaction; this fear being later supplanted by the *belief* that her partner has in fact obtained sexual satisfaction elsewhere. An alternative explanation is given by Savage (7), who has drawn attention to a tendency among the lower animals for the pregnant female to shun the male. He believes that a pregnant woman may experience similar feelings of aversion, and that these are subsequently transferred by projection to the husband. Thus, she comes to believe that the fault lies not with herself but with her husband. In this way, the stage is set for the appearance of delusions of infidelity.

Another notable sex-difference in the psychogenesis of the Othello psychosis arises from the fact that women are more susceptible than men to the pernicious *gossip* of members of their own sex.

Although the role of alcohol in the psychogenesis of the Othello psychosis in the *chronic* alcoholic has been fully discussed, the baneful influence of even small quantities of alcohol in lowering the resistance of those susceptible to jealousy is clearly demonstrated in several of the cases described in this paper (see cases 2, 3, 4, 6).

The flood of emotions that engulfs the sexually jealous man stems from the fact that the infidelity of his mate would constitute an impediment to the satisfaction of powerful instincts such as those of mating and ownership. His emotional tension is often heightened by the fact that doubts, concerning the chastity of his wife, lead by subtle stages to doubts, concerning the paternity of his children (see cases 5 and 6). Moreover, a man's *amour propre* can receive no greater slight than that resulting from a belief that his marital rights have been usurped by a rival. This last factor is clearly embodied in Pozdnyshev's remark, "I felt a hateful consciousness of my humiliation and of his (Trukhachevski's) victory . . . ." La Rochefoucauld gives expression to the same motif, "In jealousy there is more self-love than love." The delusions of infidelity which form the basis of the Othello psychosis are invariably nurtured by misinterpretations of innocent actions and everyday events. Indeed, it is often difficult to decide where misinterpretation ends and hallucination begins; thus, the sounds so often heard during the night by those suffering from the Othello psychosis may be *real* sounds misinterpreted as signals from a lover, or of an entirely hallucinatory character.

Management and prognosis

The Othello psychosis poses a number of vexatious problems for the psychiatrist. Many of those afflicted by delusions of jealousy are potential suicides or homicides. Indeed, the wives of patients displaying the Othello syndrome not infrequently find themselves in a terrifying predicament, for, with their husband's hands around their throat, they are forced to choose between the Scylla of a false confession and the Charybdis of an avowal of innocence, knowing full well that either choice may carry the death penalty. In other instances their lives are rendered burdensome by the necessity of having to walk through the streets with downcast eyes for fear of arousing the anger of a jealous husband.

It is frequently necessary to arrange for the certification of these cases in order that they can be removed to one of the *locked* wards of a mental hospital. Unfortunately, this procedure usually serves to reinforce the patient's suspicions concerning the chastity of his wife since he tends to believe that she has connived at his removal to further her own nefarious plans. In addition, these patients often come into the diagnostic purview of the "paranoid condition" as they are comparatively well-preserved in their intellect and personality. This point is well-illustrated by two (personal) cases mentioned by Clouston (3)—"I have now in the asylum two quiet, rational-looking men, whose chief delusion is that their wives, both women of undoubted good character, have been unfaithful to them. Keep them off that and they are rational. On that subject they are utterly delusional and insane."

These well-preserved psychotics stand out from among the chronic inmates of the locked wards as tragic misfits and odd-men-out. In the writers' experience, treatment fails to influence the course of the psychosis unless the delusions of infidelity arise in a depressive setting. In the latter case, the exhibition of electro-shock therapy may be beneficial. In some cases of paranoid schizophrenia or paranoid condition, complicated by delusions of jealousy, the entire psychosis may undergo a spontaneous remission (see cases 2, 4, and 5). Moreover, when the delusions of jealousy are associated with physiological changes due to pregnancy or the menopause, the prognosis is rather more hopeful. In many cases, the delusions tend to diminish in intensity with the passage of time. When this happens, it may be possible to permit the patient to return home after warning the wife to ensure that she is never left alone with her potentially dangerous partner. There can be no doubt that delusions of infidelity show a strong tendency to fluctuate in their intensity, even passing into abeyance for long periods. Nevertheless, the psychiatrist

must be ever mindful of the fact that a patient with delusions of infidelity may contrive to hide his delusions in a cunning attempt to regain his freedom although, in reality, like Shakespeare's tormented *Othello*, he "dotes, yet doubts, suspects, yet strongly loves."

Summary

The authors offer reasons in support of their belief that delusions of infidelity differ in material respects (psychosocial significance and psychopathology) from paranoid delusions in general. They suggest that when delusions of jealousy dominate the picture, the term "Othello syndrome" may usefully be used as an *ancillary* diagnostic term within the framework of the primary psychosis. In support of this thesis, a series of cases is described in which delusions of infidelity constitute the dominant *motif* of the psychosis. The fact that delusions of jealousy may appear in both functional and organic psychoses is stressed, and case histories are used to illustrate salient features in the psychopathology. Several of the cases reported in this paper suggest that a marked disparity in the sexual appetite of married partners (constitutional or acquired) is strongly conducive to the development of sexual jealousy, and that in these circumstances *either* partner may develop delusions of jealousy concerning the other. In examining the psychopathology of delusions of infidelity, close attention has been paid to the views of both alienists and litterateurs noted for their knowledge of human nature. Finally, the management and prognosis of cases exhibiting the Othello psychosis have been briefly discussed.

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ATTITUDES OF MENTALLY ILL PATIENTS TOWARD DEATH[1]

HERMAN FEIFEL, PH.D.

All of us, at one time or another in life, come to grips with the problem of death. Life insurance, the passing away of a parent, Memorial Day, the belief in immortality—all attest to our concern. Historical and ethnological information (5) reveals that reflection concerning death extends back to earliest known civilization and exists among practically all peoples. Some investigators (4, 6, 24) hold that fear of death is a universal reaction and that no one is quite free from it. Freud, for instance, postulates the presence of an unconscious death-wish in people which he connects with certain tendencies to self-destruction (9). Teicher feels that "war neuroses" are essentially neurotic forms of the fear of death (22). Heidegger states that time has meaning for us only because we know we have to die (12). Stekel goes so far as to express the hypothesis that every fear we have is ultimately a fear of death (21).

Death themes and fantasies are especially prominent in psychopathology (1, 3, 22). Ideas of death are recurrent in some neurotic patients and in the delusions and hallucinations of many psychotic patients. The stupor of the catatonic patient, for example, has sometimes been likened to a death state. Caprio (4) thinks that all nervous and mental disorders can be regarded as forms of "psychic death". Also, a number of psychoanalysts (8, 10, 17, 19) are of the opinion that one of the main reasons that shock measures produce positive effects in many patients is that these treatments provide them with a kind of death-and-rebirth fantasy experience.

Both theology and philosophy have grappled with the problem of death and its meaning. Nevertheless, a review of the literature indicates few studies of an empirical nature dealing with attitudes toward death. This is particularly true with reference to mentally ill persons. The author could find none which focused on hospitalized adult patients. The studies that have been reported emphasize the attitudes toward death of children (16, 18), college students (2, 15, 20), and a small number of psychoanalyzed neurotic patients (3) in whom ideas of death were noticeable.

The major purpose of the present exploratory study is to augment the limited available data regarding the conscious attitudes toward death of mentally-disturbed patients. Examination will also be made of the relationship between the adjustment level of the patients and their attitudes toward death.

METHOD

Administration

Hospitalized mentally ill patients were asked to indicate when they thought "people in general" were most afraid of death. They were told to rank this aspect among eight age periods ranging from childhood through old age. The life span was divided into the following categories: childhood (up to 12 years); adolescence (from 13 to 19 years); the age span from 20 on was divided into decades, the last category being 70 years and over. Directions and method of presentation were as follows:

Directions: People are more afraid of death at certain times in their lives than at others. After that period in life when you think people are most afraid of death, write the number 1; after that period which takes second place in this respect, write the number 2; until finally you write the number 8 after that period when you think people are least afraid of death.

Up to 12 years____
13 to 19 years____
20 to 29 years____
30 to 39 years____
40 to 49 years____
50 to 59 years____
60 to 69 years____
70 years and over____

With regard to the instruction to rank fear of death with "people in general" rather than themselves in mind, one of the findings of Bromberg and Schilder is pertinent. These

[1] From VA Regional Office, Los Angeles, California.

TABLE 1.—MEAN RANKS OF AGE PERIODS WHEN PEOPLE MOST FEAR DEATH BY CLOSED WARD AND OPEN WARD PATIENTS

Group	Mean Rank of Age Periods							
	Up to 12	13-19	20-29	30-39	40-49	50-59	60-69	70 and over
Closed ward patients (N = 38)	5.9	5.2	4.9	4.3	3.7	3.5	4.1	4.5
Open ward patients (N = 47)	6.2	5.1	4.2	4.1	4.0	3.7	4.2	4.4

Note: a mean rank of 1.0 would indicate *most* fear of death.

authors discovered little difference between subjectively held attitudes toward death and those generally attributed to other persons.

The patients were also requested to (a) answer the question "What does death mean to you?" (b) draw a picture of or represent death in any way they wanted to on an 8 by 10½ inch, blank sheet of paper, and (c) respond to the following hypothetical situations (13) concerning death: 1) If you were told you could do only one more thing before dying, what would you select to do, disregarding cost, time, effort, etc.? 2) If after death you had to return to earth in a non-human form, what would you choose to be? 3) If you had a year to live and $50,000 to spend, how would you spend it?

Subjects

The subjects comprised two groups of mentally-disturbed patients in a Veterans NP Hospital. One group consisted of 38 acutely-disturbed, closed ward patients in partial remission; the other, of 47 open ward patients diagnosed as psychoneurotic and character and behavior disorders. Patients diagnosed as schizophrenic reaction, paranoid type (79%) and schizophrenic reaction, unclassified (14%) dominated the closed ward population. Patients characterized by anxiety (20%), somatization (15%) and depressive reactions (15%) constituted the major subgroups among the open ward patients. Both groups of patients were well-matched on the variables of intelligence, age, education, and occupational background. They were slightly above-average in intelligence (mean I.Q.'s 104; 108), with mean ages in the middle 30's, and had completed close to 3 years of high school. Skilled and clerical job backgrounds prevailed in both groups. A more detailed description of both populations can be found in Feifel (7).

RESULTS AND DISCUSSION

Fear of death

To determine when the patients felt people most fear death, mean ranks were computed, for both groups of patients, for each age period. Since it was thought that age might be an influencing variable, comparison was made between the ranks given the various age periods by patients under and over 35 years of age in both groups. In neither were reliable differences found. Total group average rank determinations, therefore, are reported.

Table 1 shows that both closed ward and open ward patients consider the 50's to be the time of life when people are most afraid of death. This is followed by the age period of the 40's. Death is least feared in childhood, followed by adolescence. Both groups view fear of death as increasing gradually from childhood on, reaching a peak in the 50's, and then subsiding somewhat in the 60's and 70's. The drop in the 60's and 70's may be accounted for by the feeling that some resignation or adjustment to the inevitable takes place after the 50's. It is interesting, in this regard, to note that studies of suicides (14, 23) indicate their peak as occurring between the ages of 45 and 54 years. The incidence drops sharply thereafter, becoming rather small among persons 65 years and over.

Another way of analyzing the data is to consider the age periods ranked one (most favorable) and eight (least favorable). In this focus, table 2 indicates that the patients in

TABLE 2.—PER CENT OF CLOSED WARD AND OPEN WARD PATIENTS RANKING EACH AGE PERIOD WHEN PEOPLE ARE MOST AFRAID AND LEAST AFRAID OF DEATH

Group	Choice	Per Cent Ranking Each Age Period as Most Favorable and Least Favorable							
		Up to 12	13-19	20-29	30-39	40-49	50-59	60-69	70 and over
Closed ward patients (N = 38)	Most	21	5	5	8	8	8	8	37
	Least	52	5	5	3	0	0	3	32
Open ward patients (N = 47)	Most	13	13	14	6	9	11	4	30
	Least	60	2	0	2	6	0	0	30

both groups rank the period of the 70's and over as the time of life when people are most afraid of death, followed by childhood. The open ward patients rank adolescence and the 20's on a par with childhood in this respect. A majority in both groups select childhood as the age period when people are least afraid of death. The 70's and over age period is ranked second. Old age and childhood apparently dominate the thinking of both groups as to when people most fear and least fear death. No reliable differences exist between the groups with respect to their rankings on this score.

The frequent choice of childhood as a time when people *most* fear death is rather surprising. Some investigators (2, 18) hold that attitudes toward death are formed chiefly by experiences derived from the early life of the individual. Also, that children's connotations of death revolve around the idea of deprivation. Since evidence from several directions suggests that, more than average, mentally disturbed patients come from homes where they experienced early affectional deprivation and rejection, it is conceivable that in many such persons impact of the fear of death comes to the fore earlier than in most people. Another possible contributing factor is suggested in the psychoanalytic thinking that anxiety concerning death is in essence a repetition of previous childhood castration fears (11).[2]

Selection of the 70's and over by a good number of the patients as a time when people are *least* afraid of death is also somewhat unexpected. It seems related to feelings that, by that time, people know they have to die and accept the idea without much compunction; in addition, life offers older people so little, why fear death. The notion was entertained that some relationship might exist between these rankings and a specific outlook on death. Analysis of the data along this line revealed no significant relationship. There was little correlation, for example, between patients ranking the 70's and over as the time of life when people most feared or least feared death and their conception of death as representing either "peace" and "preparation for a new life" or viewing it as "the end" and "you're through". Actually, there was a slight trend for those regarding death as "the doorway to a new life" and "bringing rest" to more often rank the 70's and over as a period when people were *most* afraid of dying. If the rankings reflect subjective feelings to any large degree, a future investigation might concern itself with the implication that certain individuals who fear death strongly attempt to master their anxiety in this area by perceiving death as the precursor of a new kind of life.

[2] I want to thank Samuel Futterman, M.D., for bringing this possibility to my attention.

TABLE 3.—Significance of the Differences Between Response Category Percentages of Closed Ward and Open Ward Patients to Question "What Does Death Mean to You?

Category	Per Cent of Closed Ward Patients	Per Cent of Open Ward Patients	Significance of Differences Between Closed and Open Ward Patients
The end; time to go; you're through	50	49	N.S.*
Preparation for another life	21	23	N.S.
Rest and peace	13	17	N.S.
Don't know anything about it; don't think about it	16	11	N.S.
	100%	100%	
Number of cases	38	47	

* Not significant at the .05 level.

Meaning of death

Table 3 indicates that the greatest number of patients in both groups view death with a kind of philosophic rationalization, as the inevitable, final process of life. The next predominating outlook is of a religious nature. Death represents only the dissolution of bodily life and, in reality, is the doorway to a new life. This is followed by the conception of death as a time of rest and peace, a supreme refuge from the turmoil of life. It is noteworthy that 16 per cent of the closed ward patients and 11 per cent of the open ward patients found thinking about death so anxiety-provoking that they denied having any ideas at all about it. No significant differences were found between the groups for any of the response categories.

Reliability of the categories was determined by having an independent judge score the

answers. Agreement was 91 per cent, indicating that response classification was carried out with a high degree of consistency. Agreement on the responses categorized in tables 4, 5, and 6, which are to follow, ranged from 87 per cent to 93 per cent.

The patients' concepts of death as evidenced through their drawings were essentially similar to those indicated in table 3. One aspect, however, is worthy of comment. This was the frequent depiction, in both groups, of death occurring by means of some traumatic event, e.g., being run over by a tractor, crashing in a plane, being shot, etc. Bromberg and Schilder have also noted this fear of death via mutilation and dismembering in neurotic children. It is quite likely that violent conception of death mirrors self-held feelings of aggressivity toward others as well as oneself.

Hypothetical situations

Table 4 shows how the patients respond to the hypothetical situation of doing only one more thing before dying. In both groups, most chose to do something to benefit others, e.g. "give my belongings to charity", "stop war if possible", etc. The next choice was activity of a religious nature, e.g., "to know more of God", "give my heart to God", etc. Of similar response strength was the desire to again see close family relatives and friends before dying, e.g., "I'd like to see my wife and children once more", "I'd want to be with my girl and tell her how much I really love her", "visit my uncle—he was a father to me", etc. Next was the wish to travel and encompass new experiences, e.g., "I'd like to see the whole country", "travel to Europe", "fly around the world", etc., followed by the desire to live better economically, e.g., "live in a new home", "spend more money on myself", etc. Last was the expression of the open ward patients to achieve something, e.g., "be a good musician", "a successful farmer", etc.

TABLE 4.—SIGNIFICANCE OF THE DIFFERENCES BETWEEN RESPONSE CATEGORY PERCENTAGES OF CLOSED WARD AND OPEN WARD PATIENTS TO HYPOTHETICAL SITUATION OF "DOING ONLY ONE MORE THING BEFORE DYING"

Category	Per Cent of Closed Ward Patients	Per Cent of Open Ward Patients	Significance of Differences between Closed Ward and Open Ward Patients
Benefit others	30	34	N.S.*
Activity of religious nature	18	21	N.S.
Reunion with family, close friends, etc.	18	20	N.S.
Travel	16	17	N.S.
Live better economically	13	8	N.S.
Achieve something	5	—	N.S.
	100%	100%	
Number of cases	38	47	

* Not significant at the .05 level.

Here again there are no significant differences between the groups on their category choices. Both give priority to activities of a social and religious nature rather than to more personal pleasures. This is in marked contrast to the results reported on essentially normal adult subjects (2, 13). Although the groups are not quite comparable to the patient population, the sharp difference is suggestive. The responses of the normals, to how they would act if they knew they had to die soon, emphasized self-interest and personal gratifications much more than religious and social activities. Because of their strong guilt feelings and desire for "peace of mind", mentally sick patients may have a greater need than most people to make amends to others and atone for supposed sins before dying.

Table 5 indicates the non-human forms in which the patients would prefer to return to earth after death. A "bird" was the major choice of both groups of patients. This was followed by the category "domestic animals", i.e., dog, horse, etc., and then by a "tree". Most of the patients selecting a bird stated they did so because "a bird can fly where it wants to—it's free", "it can soar high in the heavens", and for "long distances". It is interesting that, in a similar context, major choice of a bird was also characteristic of normals (13). A significant difference at the five per cent level occurred in the selection of "wild animals", i.e., lion, tiger, etc. The closed ward patients selected this category reliably more often at the 5 per cent level than did the open ward patients. It appears

TABLE 5.—SIGNIFICANCE OF THE DIFFERENCES BETWEEN RESPONSE CATEGORY PERCENTAGES OF CLOSED WARD AND OPEN WARD PATIENTS TO HYPOTHETICAL SITUATION OF "RETURNING TO EARTH IN A NON-HUMAN FORM AFTER DEATH"

Category	Per Cent of Closed Ward Patients	Per Cent of Open Ward Patients	Significance of Differences between Closed Ward and Open Ward Patients
Bird	27	36	N.S.*
Domestic animals	18	29	N.S.
Tree	18	11	N.S.
Wild animals	16	2	2.3†
Nature	3	11	N.S.
Fish	—	2	N.S.
Don't know	18	9	N.S.
	100%	100%	
Number of cases	38	47	

* Not significant at the .05 level.
† Significant at the .05 level.

reasonable to assume that this reflects the comparatively intenser aggressive promptings of our schizophrenic patients. In addition, there was a trend for the open ward patients to select the "nature" category, i.e., mountain, lake, etc., more often than did the closed ward patients.

Quite a few of the patients in both groups, blocked on this hypothetical situation, responding with "I don't know". Although the difference was not significant, twice as many closed ward as open ward patients avoided directly answering the question. To some extent, this probably reflects greater difficulty in dealing with future events on a symbolic level. Two patients of the Catholic faith felt the question was "blasphemous" and stated they could not answer it. They were included in the "don't know" category.

With regard to how the patients would spend $50,000 with only one year to live, the data in table 6 generally reinforce the results of table 4. In both groups, helping members of their immediate family and giving philanthropic assistance to others were ranked ahead of personal pleasures and self-gratifications. Again, this differs from the reported data on normals who rank traveling and

TABLE 6.—SIGNIFICANCE OF THE DIFFERENCES BETWEEN RESPONSE CATEGORY PERCENTAGES OF CLOSED WARD AND OPEN WARD PATIENTS TO HYPOTHETICAL SITUATION OF "SPENDING $50,000 WITH ONLY ONE YEAR TO LIVE"

Category	Per Cent of Closed Ward Patients	Per Cent of Open Ward Patients	Significance of Differences between Closed Ward and Open Ward Patients
Help intimates	31	34	N.S.*
Charity	27	22	N.S.
Personal pleasures	19	20	N.S.
Travel	17	17	N.S.
Achieve something	3	7	N.S.
Pay off debts	3	—	N.S.
	100%	100%	
Number of cases	38	47	

* Not significant at the .05 level.

hedonistic activities above assistance to intimates and charitable endeavors. Noticeable again is the implicit theme of the patients' need to relieve guilt feelings by paying off debts to others as a sort of atonement before permitting themselves self-pleasures.

SUMMARY

1. The patients, generally, felt that old age was the time of life when people most feared death, and childhood the period when they were least afraid.

A substantial minority in both groups of patients, nevertheless, ranked childhood as the time when people *most* feared death. It was thought that this might be related to experiences of severe emotional deprivation early in life by some of the patients and possibly connected with childhood fears of castration. A good number of the patients also ranked old age as the time of life when people were least afraid of death. The consideration was that this reflected the thinking that many older people fear idleness and uselessness more than death. The hypothesis was also entertained that a correlation might exist between religious outlook and rankings of fear of death in old age, but no significant relationship was evident.

2. Most patients perceived death as the natural end of the life process. This was followed by the religious view that it was

actually a preparatory stage for another life. Many patients depicted death as occurring through violent means. The conjecture was that this was allied to intense aggressive impulses with which these patients were contending.

3. When faced with hypothetical situations suggesting the imminence of death, the characteristic choice tendencies of both groups of patients highlighted activities oriented toward benefiting others and stressing religious values. This was in contrast to the reported findings for "normals" who activities, in similar situations, emphasized personal gratifications.

4. The *degree* of mental disturbance *per se* in the patients had little seeming effect on their over-all attitudes toward death.

It should be kept in mind that the data secured in this study pertain to conscious and "public" attitudes more than they do to the "deeper" layers of the personality.

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UNUSUAL PARANOID MANIFESTATIONS IN A CASE OF PSYCHOMOTOR EPILEPSY AND NARCOLEPSY

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This case was referred to us with a tentative diagnosis of brain tumor. Neurological examinations were negative. Pneumoencephalographic studies were negative. Spinal fluid studies were negative. The reports of two electroencephalograms, recorded at six-month intervals, are as follows:

1. This tracing shows a basic rhythm of about ten waves per second. Voltages are average and well-modulated. No focus. No spikes or seizure discharges. No response to hyperventilation. Impression: Normal EEG.
2. This sleep record contains three to four spike discharges of psychomotor type. These apparently arise from the left anterior temporal area. No response to hyperventilation. Impression: Mildly abnormal EEG. Rare spikes in the left anterior temporal region. Compatible with psychomotor seizures.

The history as related by the patient and his wife follows:

Patient: "I was always a very strong baby. At 10 months of age I was walking. I must have been around 18 months old when I fell on a crib rocker and injured my left testicle. Local doctors sewed me up, but it was necessary for me to wear a truss until I was about six years old. My mother didn't let me play with other children very much, for she was afraid I would get hurt. I started to school when I was six and made average grades. I know that soon after I started, I had some nightmares for a while. I remember that I looked at pictures on the wall and would tell my mother that dogs were going to get me. She would always come in and sit on the bed by me until I went to sleep. I remember having these fears only a few months. I guess I always had dreams but never any more bad dreams until I was a young man.

"After I started to school, I developed rapidly and became quite strong. I know when I was nine or ten, I was able to beat boys who were larger and older than I. I participated a great deal in athletics. I walked a good deal, rode a bicycle, and rode a horse. It seems to me that I was always superior to other fellows my age. Most of my strength was in my arms, for I could never run. I reckon the injury I received when I was a baby took my stride.

"I began to notice that I was nervous during the last two years in high school. When I would play football and a particularly exciting moment would come, I would just freeze and be unable to move. I played fullback, and I remember we lost a game once when I froze and was unable to make a touchdown when we were on the one-yard line. I got the ball and then couldn't move out of my tracks though there was plenty of time for me to go through the line. I went to junior college and graduated. After that I taught a year and then went into the Army for a hitch. While I was in the Army, I boxed a good deal and fought 22 or 23 fights. I got so bad about freezing I had to quit boxing to keep from getting hurt bad. Ever since that time I have had trouble with these freezing spells. I have lost a number of nice fish because of it. On two or three occasions while deer hunting I have become paralyzed and unable to shoot the buck. This has not happened every time, however. As the years have gone on, I have also gotten to where I will just drop off to sleep during the day for no reason. Sometimes I even go to sleep standing up. I had to quit one job I was on because I was afraid I would fall into the machinery.

"About 5 years ago I began to have nightmares. They weren't too bad for the first 2 years, but for the last 3 years it has been awful. At least I reckon they are nightmares. My wife says so."

Wife: "Ever since we have been married, I have noticed from time to time that he would freeze and be unable to move. These attacks always came on when he got excited. I have noticed too that whenever he gets still for a few minutes, he drops off to sleep. Many is the time I have just been talking with him and would suddenly realize he was sound asleep.

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He would just lie in whatever position he was in and might sleep a number of hours without awakening. It doesn't seem to matter how much sleep he has had the night before.

"These nightmares though are awful. It always happens at night after he has been in bed 2 or 3 minutes. Many is the time that I have watched him. He seems to be trembling as though he were struggling. He does not jerk, however. This may go on several minutes, and then he jumps up with a wild look in his eyes and begins to accuse me and other people of all sorts of things. If it happened every night, I don't believe I could stand it, but it does happen sometimes two or three times a week. When he arouses himself, he is irrational. He believes that terrible things have been done to him while he was asleep. One night he told me somebody put snakes all over him. There is just no reasoning with him. Sometimes he carries on about it all night. He accuses me of putting something in his mouth. He says I have opened the window or door and let somebody in to molest him. Sometimes I am able to talk him out of it, but most times I can't. His belief that his nightmare is true sometimes lasts up through the next day. He is just so different than when he is normal. He uses lots of oaths, and if I were to dare to disagree with him, I am sure he would hurt me. Sometimes I have been truly afraid for my life."

Patient (breaking in): "Would you know, Doc, of any dope or poison that could be pumped into the veins that would make you feel like that, or could there be any gas pumped up through the heating register? It seems to me sometimes I can smell some sort of fume. It just about scares me to death. I can hear people talking around me. I hear doors opening and slamming and windows being raised. Sometimes I can hear somebody walking across the room and feel hands hold me by the shoulders, and then again they will try to crowd some pills into my mouth. I can't move. I can't do anything. It's horrible. When I am finally able to get my eyes open, there is nothing there. Nothing could be any more real, and though I feel that my wife wouldn't lie to me, I know that it has happened. It is just as plain as you are sitting in that chair. I get up and check on the doors and get the gun out. I have never yet been able to find anything, and it does seem to me that I could at least see these people, but just as soon as my eyes open it ends. They're gone. Even though their hands were on my mouth just a moment before. I know it can't be, but, Doc, it's obliged to be. I get infuriated and feel that if I could just get my hands on them, I would stop this business once and for all. Sometimes I am positive that my wife is in on the plot. At other times I just know this is ridiculous. I have scared her so bad I know she would have confessed if it were so."

Wife: "He is definitely scared to death. He is just like a child in a frenzy. He will resort to anything to protect himself. Many is the night he sleeps with a pistol or dagger in his hand. He has had every window and door covered with steel grills and has burglar-proof locks on all the doors. Sometimes after these spells he has all the locks changed. He has gotten to where now even in the day time, when he comes in, he locks all the doors and looks under the beds, in the basement, closets and everywhere. He won't go out at night or let me go out. Sometimes he gets into such a rage that I have to beg him to let me out of the house. Several times I have been able to get his keys and get out and had to hide in the shrubbery sometimes all night until he got over it. His spells vary in length. He may get over his ideas in an hour, and then again it may last as long as 24 hours. He has gotten to where he accuses the neighbors, his fellow workmen and many people of being in on this scheme. At times he will swear that I am assisting. Several times he shook me so hard I thought my head was going to come off. Then maybe the next day he will apologize for his acts and tell me that he loves me and knows that it is not so. You just can't imagine how horrible night time is."

Patient: "Doc, there is no way to tell you and no way to tell anybody what it is like when I have one of these attacks. You can just imagine being paralyzed, not being able to open your eyes or move and hearing people creep up on you and hold you down and rub something in your mouth and your being totally unable to do anything about it. You'd keep a pistol in your hand too if you'd feel somebody hold your shoulders and put a knife across your throat. I never do taste

anything, but I feel it. Mainly it seems like it's a matter of feeling, hearing and very rarely smelling. I am never able to see anything. Once my eyes are open, it is all over. It takes a great deal of convincing to make me believe this isn't true."

Wife: "Last summer I was in the hospital for a couple of weeks. When I came home, I found that my husband had carried a sleeping bag out in the back lot and spent the whole time there. I got in early one morning, and when I came in, he was sitting there behind his gun case with his rifle in his hands. I had a hard time talking it out of him. Apparently he had spent the whole 2 weeks sleeping out in the yard in the weeds."

Patient: "Yeah, and didn't nothing happen either. The whole time I was out there until that last night when I went back to the house to sleep, and then it hit me again."

This patient was put on 1½ grains Dilantin three times a day in an effort to control his psychomotor seizures. A prescription for a 15 mgm. Dexedrine spansule on arising was prescribed.

After one month it was reported that the patient's psychomotor seizures at night were unaltered but that his attacks of narcolepsy were much improved. The patient was now placed on 250 mgm. Hibicon four times a day and 1½ grains Phenobarbital at night in addition to his other drugs. Improvement in his hallucinations was small if any. The patient could not be induced to take phenobarbital, believing that if he were to take anything to help him go to sleep, he would be killed by his enemies. Other anti-epileptic drugs were then prescribed to no avail.

The plight really became desperate. The patient's wife felt that she was in extreme danger of her life during his seizures and stayed under constant tension anticipating the next one. The patient was given a frank evaluation of his case. He said though the attacks seemed completely real to him, he was willing for anything to be done to help him. In view of the dismal failures of medication we had little more to suggest except temporal lobotomy. Surprisingly enough the patient readily agreed, leading us to believe that he perhaps had more insight than we had suspected. It is rare that one finds a patient with paranoia, regardless of what the causes, willing to submit to surgery when the purpose of the surgery is to change his way of thinking, especially when he realizes that there is some risk of death from the surgical procedure.

During the first week after surgery he did well, but soon thereafter his psychomotor seizures began anew. They did not come quite as often but were just as intense. The patient was placed again on 1½ grains · Dilantin t.i.d. with no result. Mesantoin .1 gm. 3× daily was substituted for the Dilantin. To our surprise we had no difficulty in persuading him to take a sedative at bedtime. Willingly he took 1½ grains Nembutal 45 minutes before bedtime. The addition of this medication was followed by a marvelous change. During the last 2 months, his wife reports, he has had no seizures at all. The patient is now able to realize that the disturbing experiences were unreal, hallucinatory manifestations.

Discussion

The purpose of this presentation is to reemphasize the concurrence of psychiatric disorder and psychomotor epilepsy. Interesting questions sometimes arise in considering the relations between them. For the sake of clarity let us first consider ordinary psychomotor seizures and then some of the broader psychiatric manifestations obscured in such patients. Let us finally consider what the literature offers to explain or account for these manifestations and their relations.

The term psychomotor epilepsy is now generally accepted to be the nomenclature of choice for the synonymous "epileptic equivalent," "psychic equivalent," "ictal automatisms," "fugue states," etc. The seizure is characterized by poorly coordinated, but fairly elaborate, apparently purposeful movements (1). The disorders of behavior seen in seizures clinically are many. Premonitory signs of seizure impending may be noticed hours to days before one precipitates These signs are irritability, a wild look, inappropriate phrases or peculiar gestures. Gastric auras are more common than any others in psychomotor epilepsy (1). Patients may show any combinations of these activities: Incoordination, negativism, staring, pushing, groping, searching, chewing, swallowing, spitting, smacking of lips,

laughing or crying, rubbing, plucking, undressing, shouting, screaming and confused talk. Sometimes consciousness is not lost, though the patient is usually amnesic. He may appear drunk, movements are poorly coordinated but seem purposeful. He may attempt to assault someone nearby but will often react to commands, even though he is negativistic and resistive. He is still apparently aware of his surroundings. Some cases show more elaborate movements that are clearly purposeful, such as going to get a drink of water, undressing or taking dishes out of the sink. Speech may be unaffected except for its content. Rarely speech impairment follows an attack. Occasional uncontrollable patterns are produced which are dangerous to the patient and others. Some patients may break into a mad dash running headlong into busy traffic. Others may seriously injure or kill loved ones by choking or stabbing. Otherwise normal people, except for perhaps a few moments once or twice a year, have to be permanently institutionalized because of these psychomotor attacks. After the attack the patient usually is amnesic but at times will fabricate and rationalize his activities when told of them. Not all are amnesic, however. Some patients will report feeling worried, afraid, or annoyed; and some will even report, as the above case demonstrates, elaborate hallucinatory phenomena and then have difficulty distinguishing the seizure state and its hallucinations from reality and act in appropriate fashion to the hallucinatory stimulus. There is usually no post-ictal stupor or confusion (1).

The electroencephalographic pattern of psychomotor seizures is, briefly, negative spikes in the anterior temporal area in interseizure records. During seizures they spread to all leads and are positive in all except the anterior temporal leads. This tends to form flat top waves, serrated, that are usually mixed with high voltage round six per second waves. Activation of an ear electrode nearest the focus will tend to lateralize the focus. (That is, if the focus is in the right anterior temporal lobe, and the right is activated as a reference, the spike will be negative on the right side and positive on the left and also in all other leads. This localizes the focus on the right side.)

Psychiatric disorder, and particularly psychosis, is a common complication of psychomotor epilepsy (2, 3). The so-called epileptic personality is more common by far in psychomotor epilepsy. "The non-ictal psychiatric concomitants manifested by patients with psychomotor epilepsy in general cover almost the entire range of psychiatry," according to the *Atlas* of Gibbs and Gibbs (4, 6, 7). It is, therefore, understandable that one often misses or attributes to an ordinary psychiatric disorder the psychomotor seizures themselves (6). Listed are some of the psychiatric disorders reported in psychomotor epilepsy:

Personality disturbance	12.2%
Unclassified psychosis	7.2
Behavior disorders	7.5
Unclassified neurosis	5.3
Depression	2.0
Suicidal tendency	2.8
Paranoid tendencies	2.5
Hallucinations	2.7

Gibbs and Gibbs in their *Atlas of Electroencephalography*, 1952, tabulated over 377 cases of psychomotor epilepsy with 44.4% of these cases demonstrating concurrently at least one of 40 different psychiatric disorders, exclusive of mental deficiency but including two cases of schizophrenia.

It would be difficult to state conclusively in the case herein reported whether the patient had schizophrenia or not. The fact that patients with identical anterior temporal lobe foci from all EEG appearances can have associated with this anterior temporal lobe foci such diverse psychiatric disorders and symptoms leads one to suspect that the two are distinct and separate disorders in the same patient. On the contrary, one could postulate that the personality disturbance may be the result of dysrhythmic cerebration itself. Neurophysiologic experiments now being conducted by Heath *et al.* (5) and others are aimed at exploring the personality disturbances that follow lesions of certain areas in the temporal lobe, particularly around the uncus, hippocampal gyrus, amygdaloid nucleus and what Heath refers to as the septal area. The cingulate gyrus and fornix are also under intensive investigation, and it is hoped that some answers to the questions above may result from this work. This would lead to a better understanding of these interesting disorders.

The rational for the treatment of this pa-

tient came from the observation that his difficulty always began during his sleep, a hypnagogic (and hypnopomic) state. This, with the fact that the psychomotor discharge can be activated by sleep during an electroencephalogram, suggested that a temporal lobotomy might alleviate his seizures. Instead it altered his thinking enough to allow him to take sedative and anti-epileptic drugs. A quick-acting barbiturate seemed to offer more promise than one that acts more slowly. It seemed obviously desirable to produce a deeper sleep quickly and to avoid the state of light sleep that is so conducive to activation of the anterior temporal lobe focus as shown by electroencephalography. This might account for the apparently helpful effects from nembutal.

Were this patient's epileptic disorder and his psychiatric disorder part and parcel of each other? Did he suffer from an intrinsic schizophrenia in addition to psychomotor epilepsy? Were the hallucinations purely a product of cerebral dysrhythmia? If so, were his paranoid delusions and feeling a secondary reaction to his inability, because of the ictal state, to distinguish the whole complex from reality?

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ON TOUCH AS A SPECIAL SENSE

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The sense of touch is a subject of considerable significance not only to the physiologist, but also to the anatomist, the neurologist, the psychologist, and the psychiatrist.

The anatomist is concerned with the structure of the parts that serve as touch; the physiologist deals with the function of these parts or organs; the neurologist is chiefly interested in distrubances of the function, as a nervous symptom; the psychologist studies the function in relation to normal psychic processes; and the psychiatrist deals with the sense of touch chiefly as a psychic disturbance manifested as hallucination.

Touch has long been considered as one of the special senses, in contrast to those of common sensibility, furnishing like the others of its class a means of learning the nature of things outside the body, or the sum of knowledge, in the development of the organism, by both animals and man. Of the five special senses, usually so considered—sight, smell, taste, hearing, and touch—touch is the first to develop in the process of evolution (phylogeny) and is said to be the last to disappear in their order of disintegration (7).

Consideration of touch as a special sense has been undertaken here because of the confusion encountered in reading manuals and textbooks on the subject. Modern medical dictionaries continue to define touch as a special sense, but from one authoritative source (18) one learns that the original distinction between special and common sensation is "no longer useful," and that the words have "been appropriated" to express the idea that the special senses "are coming to mean" sight, hearing, taste, smell, and equilibrium. These are to be considered special senses because they are "in the head," have elaborately evolved sense organs, and because "they serve to orient the body to the distant environment." Touch is to be classified only as one of the forms of sensibility common to the entire surface of the body. Thus, the special senses are no longer to be considered as the means by which the growing individual learns, but only for the orientation of the body. A more recent edition of this physiology (19) contains the statement on this subject that, as "grouped by clinicians," the special senses are those which are related to the cranial nerves: "vision, audition, taste, olfaction and vestibular." This viewpoint has been repeated by other books also on anatomy and physiology.

These points of view omit a distinction in relation to the sense of touch that is seldom made, but which seems to be of special importance to this subject. This is that the word has a dual inflection; in both grammar and physiology, one is called active and the other passive; in other words, *I touch* and *I am touched*. In the active sense of the function, touch stands with sight, smell, taste, and hearing as one of the most important among them, by which all concrete knowledge is gained. Being touched is in contrast of minor significance.

In addition to this fact, *touching* is a recognized substitute for sight, not only in the dark by those with normal vision, but still more significantly when there is total lack of the sense of sight, or blindness, as exemplified by such well-known instances as Helen Keller (31) and Laura Bridgman (40). By touching, all blind persons learn to speak, to understand both spoken and sign language, and thus to live very nearly normal lives.

Concerning the vestibular function of equilibration which has been suggested in place of touch in the list of special senses, experiment with birds has shown that when the labyrinth has been removed, there is entire lack of spatial orientation at first, which in time is regained by the substitution of the senses of touch and sight. If these senses are temporarily restricted, there follows the same lack of sense of position of the body as in the beginning, which is again corrected by the restoration of sight and touch (41).

That the idea of a dual sense of touch has been held before is shown by the following expression: "The office of the brain and nerves is to perceive. . . . the sense of touch is under-

stood in a two-fold manner" . . . all are changes arising from "affections of external bodies" . . . but in a somewhat different and more proper acceptation of the sense of touch is said to be the change arising in the mind, from external bodies applied to the skin; more specifically to the ends of the fingers. "For by the fingers, we more accurately distinguish the tangible qualities of things than by other parts of the body" (22). Also, "One of the most important of the external senses is the touch . . . its most delicate seat is in the points of the fingers" (11). And somewhat later, "The pulps of man's fingers have highly developed patterns (papillary ridges) and these are more variable and complex than those of any other parts in any of the primates . . . and are the most sensitive areas in any hand or foot" (32).

Early in the evolution of the sense of touch it "seems to be" mediated by free nerve endings. In man and mammals, in addition to free nerve endings, special types of touch receptors are found in the skin and viscera (23).

These primary organs of touch are variously identified by different authorities. They are described as specialized formations in the skin, made up of groups of cells of ectodermal origin, to form bodies characterized as corpuscles, discs, etc. to which the names of those who first described them are attached. These bodies represent definitely specialized organs comparable to those in the head.

Pacinian corpuscles are described as lamellated bodies in the subcutaneous tissue of the palms of the hands and soles of the feet; also in other focal areas where touch is particularly acute. Similar bodies are present in the subcutaneous tissue of the "pulp of the fingers". The capsules of the latter forms are described as thinner, with a thicker central core, where axis cylinders "ramify more extensively and end in flat extension" (20). Corpuscles of Golgi and Mazzoni are reported to be plentiful in areas of the hand, foot and other skin localities (14). Merkel's discs are found in the finger tips, and Meissner's corpuscles in the skin papillae of the palms and fingers (8).

Dearborn (15) describes Meissner's corpuscles as present in the tactile papillae or the "true skin"; rows of them are said to make up the concentric lines seen on the distal phalanges of the fingers. "Every fourth papilla is tactile and contains one or two Meissner's corpuscles, or about twenty-one to each square millimeter."

Pacinian corpuscles are further described as being concerned with deep pressure; Krause's end-bulbs, with heat and cold; while the organs of Ruffini in the palms of the hands and fingers are "supposed to be for touch." The same author speaks of Meissner's corpuscles in the skin papillae, as possibly related to pain, or "may be" touch, while Golgi bodies are "anatomically in relation to elastic spindles" (42).

This is all very indefinite, but the exact function of these various bodies which are considered to serve the sense of touch is not of special importance in connection with the subject under consideration, or the difference between the special sense of touch (I touch) and that of general tactile sensibility (I am touched.)

The subject of the relation of the special touch sense with the other special senses leads to the examination of the exact anatomy of the eleventh cranial nerve—the Spinal Accessory—since the physiologists suggest an anatomical basis for sensory classification rather than a physiological one. Here one finds another confused situation, and it is apparent, as Bernard (9) is reported to have said, that "The study of this nerve is very difficult" (17). It was Bernard's opinion that the spinal accessory nerve should be considered "essentially motor". It should be noted that he did not say *entirely* motor.

Later authorities also speak of the eleventh cranial nerve as having motor function. Elliott (16) calls the spinal portion the true eleventh nerve and says that it is really a cranial nerve. Gray's *Anatomy* (21) describes the eleventh nerve as being composed of two parts: 1) cranial; 2) spinal. The cranial part is made up of four or five delicate rootlets from the side of the medulla, while the spinal portion arises in the gray substance of the upper five cervical segments of the cord. An interchange of fibers between these two parts is mentioned, and further that monkey experiments indicate that the communications with the cervical nerves carry sensory elements from the sensory root fibers in the dorsal root ganglia of the spinal nerves. The spinal part

is said to communicate with the C2-C3 and C4 cervical nerves, and the brachial plexus carries fibers from C4-C5-C6, etc., to the upper extremity.

Elsewhere, one reads, "The spinal accessory divides within the jugular foramen into the internal and external rami, and the internal ramus (the accessory branch of the vagus) joins the vagus nerve just outside the foramen." This is said to be purely voluntary and supplies the sternocleidomastoid and the trapezius (25).

On the other hand, Windle (46) describes the spinal accessory as having scattered group cells of sensory type along the course of the intracranial rootlets. Weigner also found "various types of anastomosis" between the dorsal roots of the upper cervical nerves and the spinal accessory. He also sometimes found swellings on the intracranial part of the eleventh, which according to microscopical study were made up of sensory type cells. Further, in both the cat and the monkey, ganglia are present of the intracranial portion of the eleventh nerve, thus forming a mixed nerve.

In the embryo, Streeter (44) found that the complex of the tenth and eleventh cranial nerve possesses mixed sensory and motor rootlets, the ganglia of which are both derived from the same part of the ganglionic crest. During their development the "cephalic end becomes predominantly sensory and the caudal end more motor." The eleventh cranial nerve "extends caudalward into the spinal region of the 3d or 4th cervical segment," sometimes further.

The evidence of a sensory function in the spinal accessory nerve is obviously still too fragmentary to be decisive. Like the general confusion concerning the classification of what have long been known as special senses (sight, smell, taste, hearing, touch), mediated by the cranial nerves, this fact would seem to merit clarification by definite, intensive study with that end in view.

Summary

1. Attention is called to the fact that there is general lack of agreement among the textbooks and manuals concerning how those senses commonly known as *special* shall be classified.

2. Shall this group be limited to those which are "in the head," with touch omitted, and equilibrium included instead, or shall the special senses continue to mean those through whose function all learning of the outside world is acquired: sight, smell, taste, hearing, and touch?

3. The twofold nature of touch is discussed; the difference between the active form, *I touch*, and the passive one, *I am touched*.

4. The question is raised whether the eleventh cranial nerve—the Spinal Accessory—actually has only motor function, and evidence is presented which suggests that it may include both motor and sensory fibers.

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SPONTANEOUS RECOVERY FROM GROSS SUICIDAL OVERDOSAGE WITH METHYLPENTYNOL (METHYL-PARAFYNOL)

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Methylpentynol[1] the non-barbiturate sedative and hypnotic, described in 1951 by Margolin *et al.* (12) has since been used widely. There appear to have been few reported cases of overdosage or of suicidal attempts with this drug, but a fatal case has been described in a woman taking 4.5 to 6 gm. (3), while the largest recorded overdosage followed by recovery amounted to approximately 10 gm. (2). The following case report of a recovery after a considerably larger dose may therefore be of interest.

Case Report

A male hysterical, alcoholic psychopath, aged 37, weight (13 st., 10 lb.), height (5 ft., 10 inch.), had been in mental hospitals on several occasions following suicidal attempts during depressive episodes. On and off over a period of years he had been taking grossly excessive doses of drugs, chiefly amphetamines but also barbiturates and aspirin.

Because of insomnia he had been taking methylpentynol ("oblivon")—apparently averaging 1 gm. per night for about four months—when following difficulties in finding a suitable job, domestic discord, etc., he "began to feel depressed and started brooding over the idea of suicide. . . . At about this time I saw two newspaper articles on oblivon. These emphasized how the drug could put a person in such a state that he would undertake deeds that in his normal state would terrify him. On about August 4 I began to buy oblivon in excess of that which I received by prescription, and in addition to six teaspoonfuls (1½ gm.) which I took last thing at night, I took capsules during the day. At first I began by taking four capsules (1 gm.) at about 10 a.m.; these would keep me feeling sufficiently 'couldn't-care-less' until 2 p.m. when I took a further four capsules. After these I just kept on swallowing two to four capsules at a time until I felt numbed enough to stop. As the days went by the doses increased" (a doctor who was called in found him rather drowsy and unsteady on August 7) "until on August 9 from the time of rising until 8 p.m., I had swallowed some 18 teaspoonfuls of elixir (4½ gm.) and as far as I can calculate at least 30 capsules (7½ gm.). . . . By 8 p.m. I had a really good depression on board, and I was somewhat unsteady on my feet, . . . despondent and suicidal. . . . I collected three bottles of oblivon elixir" (this statement was checked and found correct) "and I made up my mind that I would take all three bottles that night, the object being that I would put myself in such a state that I would be able to throw myself in front of a train or bus. I drank all three bottles (18.75 gm.) on the bus going to P., but I drank them too quickly, for instead of going to the railway station at P.—to where I remember buying a ticket—when the bus got to the foot of the road where I live, I alighted. I was very groggy by this time and bumped into several trees and bushes, until after about 150 yards I passed out. Apparently about an hour or so later I was found by two men who managed to rouse me, and when I came to, I was fully aware of all that was happening, but I was not able to speak and tell them where I lived. . . . However, they asked a lady who passed, and she told them. I can remember reaching home and being helped to bed, but I blacked out again and from then I can recall nothing until I was being put on a stretcher and taken out to an ambulance taking me to an observation ward at about 4 p.m. the next day."

When brought home in the evening of August 9 at 11.45 p.m., two empty 100 cc. bottles were still in his pockets. According to his wife, he was "absolutely helpless, quite unable to move without assistance . . .", and it was doubtful "whether he was conscious of anything around him . . . his attempts at speech were only a sort of jabbering. The whole of the night he kept tossing and moaning, but by early morning he fell into a deep sleep."

[1] Corresponds to "Dormison".

However, apparently his wife did not consider his condition very serious, and the doctor was not called until next morning. He was then—about 12 hours after he had taken that large dose—in a stupor, pulse and respiration were not depressed, and his general condition was not too bad so that no more active treatment was carried out. As there appeared, however, no way of stopping him from taking further drugs and in view of his previous suicidal attempts, it was decided to send him to an observation ward. At 2 p.m. he was still asleep but could be roused easily; he was quite unable to lift an arm and had to be spoon fed.

On admission to the observation ward, after 4 p.m., he was found "slightly drowsy". For the next three days he slept most of the time. He himself states that "for about six days my breath stank, my urine reeked and I was constipated. I also had a pain in my right side low down near the groin and in my left side in the region of the ribs. . . . All my symptoms had gone about a fortnight afterwards." He was discharged on August 16, has attended an out-patient clinic since and remained quite well.

Comment

The exact figures given may not be quite correct, but this man took apparently 4–5 gm. daily from August 4 to 8, 1954; 12 gm. on August 9 until 8 p.m.; and finally approximately 19 gm. in one dose shortly afterwards, i.e., approx. 30 gm. in about 13 hours. The picture of increasing confusion, ataxia, speech difficulties and depression presented by him is similar to that seen in a number of other unstable (neurotic and psychopathic) alcoholics who had taken large doses of methylpentynol (e.g., 6 gm. per day) for several days (8).

Methylpentynol has usually been described as relatively non-toxic, but a fatal case has been reported in a woman taking 4.5 to 6 gm. (3). The lethal dose in that case was estimated as 90 to 120 mg. per kg., which is one-sixth to one-tenth the acute oral LD 50 for mice, rats and guinea pigs (12) (600 to 900 mg./kg.). It has therefore been suggested that the margin of safety of methylpentynol in human beings may be less than in experimental animals (3, 6). In the case recorded in this paper the ingested dose amounted to 215 mg. per kg. (Recoveries after taking larger doses than in the only recorded fatal case have also been described by Lemere (10), Creditor (4), Brown and Ellis (2), Lovelace and Roith (11); and several alcoholic ex-patients of ours recovered spontaneously after having taken a dose of 25 capsules—6.25 gm.—in one go.) But several factors which modify the effects of poisons (15) may have been of importance in this case, i.e., "tolerance, habituation and the presence of disease."

In our experience there is a rather wide individual variation in response to methylpentynol, the effective (hypnotic) dose varying from 250 to 1,750 mg. However, out of 170 patients only two required 1,750 mg., among these the one whose case is here reported. (He had been a patient at Warlingham Park Hospital a few months prior to the reported incident.) All five patients who required the highest doses of 1,500 and 1,750 mg. were alcoholics and drug addicts (the highest dose needed in non-alcoholics was 1,250 mg., the average dose for all patients being 500 to 750 mg.), like the patient described above. It has been stated repeatedly that alcoholics may require larger doses of methylpentynol (6, 7), and that patients used to barbiturates do not fall asleep with doses up to 1 gm. (1, 5).

In view of the fact that he had taken relatively large doses of the drug for several months prior to the acute overdosage, an acquired increase in tolerance to methylpentynol must also be considered a possibility. May and Ebaugh (13) described the occurrence of "possibly some tolerance to increased doses" of methylpentynol in a woman previously addicted to barbiturates who started using the drug in progressively larger amounts and developed a toxic confusional state.

As to the factor of "presence of disease", this patient was in good physical health in the hospital a few months prior to the reported incident, showing no evidence of gastrointestinal disturbances (which might later have delayed absorption of the overdosage) or of liver disease (liver function tests, including the bromsulphthalein test, were normal). The state of the liver (most alcoholics are said to have a fatty liver (9)) is of special interest in this connection because of its role in inactivation: methylpentynol—in rats—is chiefly metabo-

lized in liver and kidney (14), and while in rats only approximately 6 per cent of the fatal amount administered was recovered from the liver, the amount obtained from the liver of the human fatal case represented 10 to 14 per cent of the estimated ingested dose (3).

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CONCERNING THE CONSTANCY OF THE EXTERNAL ENVIRONMENT IN SCHIZOPHRENIA

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ORIENTATION

Since Claude Bernard in 1878 (2) brought out the importance of the constancy of the *internal milieu* (which later became known as *homeostasis*) for the survival of a living organism, considerable work has been done on the subject with relation to conditions of man inclusive of schizophrenia. However, it is also quite evident that the survival of such a complex organism as man depends not only on the relative constancy of the *internal* environment but also on the constancy of his *external* environment because the latter constancy is essential for man's orientation in space and for his purposeful activity. It appears that the question of the relative constancy of the external environment in schizophrenia was neglected. Since the writers have made certain observations on the subject which may in turn reflect on the nature of schizophrenia in some cases, it seemed advisable to bring the findings to light.

The problem was approached from the angle of visual perception for the reason that orientation of man in space is dominated by this sense. Another interesting phenomenon of visual perception is the fact of the constancy of the *size* of a visual object in space in spite of relative variation in distance. Consequently, any impairment of such constancy in size of a visual object in space, under normal conditions, would be indicative of impairment of the constancy of the external environment for the individual. Such impairment was demonstrated in a case of schizophrenia by way of constant *macropsia*. Thus, the case to be quoted in detail formed the basis of this study.

For further orientation on the subject under investigation it is necessary to note that a three-dimensional visual object in space remains constant not only with reference to *size* but also with regard to *shape*, *color* and *brightness*. Several factors are given as instrumental in the process. Of these we will mention here, even if briefly, the following: 1) Adequate innervation of the eye-muscles; 2) Adequate operation of the retinal projection system; 3) Compensatory ability of the central nervous system; 4) Binocular parallax (which is operative in perception of depth); 5) Adequate retinal adaptation to color; and 6) Intactness of the geniculo-striate system (suggestive from the experimental work of Klüver on monkeys (8)). We shall comment further on the physiological, as well as the affective, factors in conjunction with out findings. We shall turn now to the clinical material.

CASE MATERIAL

In addition to the mentioned case of schizophrenia showing *macropsia*, 20 other cases of schizophrenia of various subtypes were investigated regarding the constancy of the external environment, as observable in their daily activity on the ward, and particularly as demonstrated in their application to art (painting). The latter was conducted by one of the writers (B. V. W.). The cases were "old" and "new" hospital residents; they belonged to various cultural and subcultural backgrounds of the population of the metropolitan area of New York; they were of both sexes; and their ages ranged from 17 to 48 with preponderance of the 20-age group. They received a complete psychiatric examination with special tests as may have been indicated; they were free from any demonstrable physical and neurological condition and showed no abnormalities in visual perception other than indicated in the quoted case. The following cases exemplify:

Case 1: When seen the patient was 39 years of age, a college graduate, married, gentleman-farmer. He was an offspring of puritanic stock of this country, of a father who was a "promoter", a man who was subject to mental depression, and of a mother who attempted suicide and died in a mental sanitarium. The parents were separated. One sister committed suicide.

Patient's early life is not known, but as much as could be ascertained was that he had a difficult atmosphere to cope with. He felt rejected and spoke of "weakness", implying mental "weakness", in establishing a warm relationship with his parents, particularly his father. He grew up with feelings of inferiority and

insecurity. He spoke of himself in later years as having become "upright and rigid". His scholastic achievements were quite satisfactory. His sex life was very meager. He masturbated all his life. At the age of 23 he made an attempt at heterosexual contact with prostitutes but found the relationship unsatisfactory and gave it up. At 33 he married a hospital employee of an institution where he was a patient. There are two children of this union. Patient's comments on his marital life were that the "physical" was good, but that the "psycho-life" was bad. Once he noticed an "illicit" expression in his wife's eyes, and he "wrote out a divorce for her". The history imparts that he threatened to shoot her. He denied homosexual experiences but spoke of a "psychical attempt".

His present mental condition dates back to his graduation at 23. Since then he has spent several years in various mental hospitals. He has shown during the years essentially a withdrawal reaction with preoccupations with ideas of influence and persecution. He hallucinated and has seen himself once in a temple in golden colors being God.

His present hospitalization was due to the fact that he assaulted a stranger in the street in retaliation to what he felt as a "psychic blow" from the stranger. During hospitalizations he received intensive *insulin* and *e.c.t.* therapies without much change in the clinical picture.

When seen by the writers he presented a tall, slender figure of a man 6′3″ in height and 169 lb. in weight. His general physical condition inclusive of routine laboratory tests was negative. An EEG showed some abnormality. Mentally, he was notably emotionally rigid. He spoke in a halting way, at times repeating words, and his stream of thought was marked by *para-logic*. For instance, since he had been seen by a well-known psychiatrist who reputedly treated prominent people, he considered himself superior. He felt a kinship with Queen Elizabeth because "she gave considerable thought to the U.S.", etc. He continued to be interested in extrasensory perceptions. He expressed considerable hostility; was fearful of people in the environment (his own aggression being due to fear of others); felt "psychically" inferior. His sensorium was clear. He enjoyed drawing, showing as mentioned already—*macropsia*.

To interpret adequately the significance of said *macropsia* in this case, it seems advisable to review briefly certain data on this subject. Before doing so, one may say with Bergson (1) that *perception* is a representation of external and internal images, a reflex action prolonged into actions by the brain. *Perception* alone cannot give us the exact relationship of things; it must be helped by *thought*. Toward this end I should like to emphasize that there is no *thought* without *affectivity*; thus, the latter plays an important role in *perception*. (For details refer to reference 6.) Next, I quote Schilder (14) who called our attention to the relationship of the *body-image* to *perception* (patient was conscious of his height). Of other pertinent data on the subject, Tschermak (quoted by Callaway and Thompson (3)) described *eserine-macropsia*. Mahl (10) has shown that chronic fear eventually leads to *parasympathetic* activity. On the other hand, it is known that *parasympathetic* activity causes a larger retinal image. Callaway and Thompson (3) observed that with the loss of adequate *sympathetic* discharge and its *negative feedback*, there would come an increasing *perception* of *threat* and decreasing *self-control*. Gellhorn (7) in discussing the constancy of the external *milieu* concluded that the maintenance of the constancy is a *cortical* function.

In addition to the foregoing data the following interpretations are of interest. Neuhaus (11) expressed the idea that *macropsia* is related to joyful excitation, whereas *micropsia* is connected with antipathy. Neuhaus thought that *macropsias* and *micropsias* are significant for "psychical infantilism". It is fairly generally accepted psychoanalytically that optical forms of experiences are closely related to the *oral* phase. Orally-fixated individuals are particularly apt to express their insecurity in optical forms and choose functional phenomena from the optical sphere (9).

Our patient's own comment on his *macropsia* was: "It keeps me from violence. . . . It takes care of my energy. . . . My unconsciousness takes over; it keeps me aware of danger," which would point to a mechanism of defense against aggressions. Regarding the use of colors, the patient identified *orange* and *blue* with his college colors. *Blue* also stood for *heaven* and *femininity*. *Purple* signified *royalty*, and he used it to draw parental and favored characters. *Yellow* meant *fear*, also *godliness*. An exemplifying drawing is one of tulips of a physician's garden which were painted *yellow*. The *phallic* symbol (tulip) may be regarded as provocative of both joyful and fearful excitation. (The physician representing a father figure reflects on his relationship to his own father and homosexuality.)

Regarding *brightness*, it is noted that very little pigment was used by the patient in painting people in general; there was a slight in-

crease in the use of pigment in painting some person he seemed to trust. A more adequate application of pigment was in landscape painting with accentuation of pigment in application to some flowers. Regarding *form*, there was no distortion, but the execution had a child-like attitude. For instance, animals had the appearance of children's toys.

Turning to factors instrumental in the process, we would point out that in addition to the factors quoted in the part on orientation, still other elements may be operative, as discussed with reference to interpretation of *macropsia*. Of further interpretation, attention is called to the evidence of *chronic fear* in the quoted case which has affective significance, to the influence of the *body image* which also has at least partly affective value, and to the regression to the *oral* and *anal* phases of development which is also of affective significance. Attention is also called to the findings of the EEG and the impediment of speech which together with other findings are suggestive of functional cortical pathology.

Case 2: Male, age 35, single, draftsman, slavonic background. His early life is unknown. He received an average education and studied engineering. He served with the Polish army from age 24 to 28, following which he came to the U.S. in 1949. He adjusted here poorly and lost three jobs during his first months of residence for reasons of: "slowness", "incompetency", or "day dreaming". He was otherwise described as schizoid. His sex life is unknown, except for having had several affairs with girls.

His mental difficulties were of at least 10 years' duration, and when seen by the writers he had been a resident of the hospital for about five years. He evidenced a rather dull affect and an "archaic" state of mind. The record indicated that he was subject to ideas of reference, persecution and influence; had hallucinations of hearing, sight, smell and taste; had bizarre body sensations. To illustrate: he heard voices of an accusatory character; he has seen ladies' faces, submarines, etc. on ashtrays; he has felt as if he had a "television" in his eyes; he felt that people used radar waves on him; he has seen a man pushing his penis in patient's penis; he felt a girl's body within him, etc. His sensorium was clear. Physical and neurological status was not significant. He received insulin shock therapy without effect.

In his activity there was no disturbance of purposefulness. He could well proceed with a plan of action. In his art work, patient was well able to "organize space". In fact, he was able to paint murals, landscapes and people in his own way equally well. His use of color-pigment was adequate as a rule although at times he would use it to excess making an onlooker feel somewhat tense. On the whole, there was no disturbance of *size, shape, color* or *brightness* of visual objects. (There was no disturbance of relative constancy of external environment.)

Summary and Conclusions

Twenty-one cases of schizophrenia were examined with reference to relative constancy of external environment. With the exception of possible transitory experiences of *unreality and depersonalization* at one time or another by one patient or another, there was no demonstrable disturbance of the relative constancy of the external environment in the studied cases except for case 1. It is of particular interest that in this case the summary findings indicated functional cortical pathology. On the other hand, the diagnosis of schizophrenia in the case could not be doubted. There were the "primary" and "secondary" symptoms in the Bleulerian sense definitely present. Particular attention is called to the severe expression of disorganization of conceptual thought.

In contrast to case 1, another case was quoted in which the diagnosis of schizophrenia was equally undisputedly correct on the same Bleulerian basis. Attention is called to the fact that while the patient has shown an "archaic" mental state, there was no disorganization of conceptual thinking. There was no suggestion of "organic" implications. Neither could one observe in the other studied cases marked disturbance of conceptual thought. It is suggestive, therefore, that in cases of severe disturbance of conceptual thinking we may be dealing with functional cortical pathology. In fact, if we should look for it, other symptoms will be in evidence. If the attitude is correct, it may help to disentangle the large group of *The Schizophrenias* into more detailed classification. As the problem is handled at present, it is not helpful in solving it as it is too global in scope. Toward this end, attention is called to the work of one of the writers (4, 5, 6) with reference to the role of the *reticuloendothelial* system in schizophrenia (see also reference to the work of Olcon (12, 13)) with the suggestion of the presence of a *capillary encephalopathy* (not to identify exclusively with etiology) in some cases. The latter could be the underlying functional cortical pathology in the quoted case 1.

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THE MISSING RING

R. K. GREENBANK, M.D.

Patients often utilize ingenious conscious and unconscious mechanisms to permit themselves to obtain psychotherapy. This paper will present a case in which unconscious forces caused the loss of an engagement ring. This precipitated the patient's seeking psychotherapy.

A 21-year-old white, married secretary appeared at the hospital requesting hypnosis to help her find her lost engagement ring. The request was referred to the Psychiatric Social Worker who found that the ring was of relatively small financial worth but represented considerable sentimental value. The patient had learned that hypnosis was used to locate lost articles. She and her husband had thoroughly, but unsuccessfully, searched their home where she had misplaced the ring.

She was referred to the Psychiatric Department and evaluated as to her motivation in requesting hypnosis. A brief psychiatric history showed that she had been married approximately nine months and was dissatisfied with her marital situation. However, she strongly desired to continue her marriage because of her husband's love for her. She felt concerned that she had never been able to make real friendships with people. She had not considered seeking psychiatric help for her emotional difficulties due to the usual resistances employed, that "psychiatrists treat only crazy people", "this was not serious enough to warrant treatment", etc.

The patient was seen in two sessions, and an attempt was made using both "mother and father"[1] techniques to induce hypnosis. The patient was alert, willing, and appeared to cooperate quite well, but was unable to be hypnotized. She commented in regard to this, "I feel that I am too much an observer and not enough of a participant." She did, however, develop a spasmodic quiver of her body which she stated was similar to that experienced at the time of her first heterosexual relationship. This occurred only when "father" hypnosis was used.

At the close of the second interview, the question was raised as to the desirability of pursuing the attempt to hypnotize the patient further. She spontaneously indicated that she did not feel she could be hypnotized as some years ago an attempt had been made but was unsuccessful. She agreed to one more visit to consider the possibilities of therapy, and to discuss in detail her emotional life.

At this diagnostic interview it was seen that the patient was suffering from a depressive reaction of moderate degree with some ideas of lack of personal value, slight motor retardation, difficulty with sleeping and eating. At the conclusion of the interview the patient requested that she be permitted to enter treatment. She was accepted for superficial, exploratory therapy one hour weekly.

Three days following this acceptance the patient called the therapist by telephone and happily announced she had found the ring. It has been "misplaced" in a basket of darning. The patient spontaneously stated that she and her husband had continued their active search of the home, however, she had "not thought to look in the darning basket, until now." This confirmed her statement when first seen, "I think I hid it from myself."

The ring was chosen as the object to be lost in that it symbolized her feelings toward her husband, her father, and men in general. This was confirmed by material brought out in treatment and by her unusual reaction to the father hypnosis. She had also unconsciously mutilated the ring with deep cuts before losing it. The patient has continued her dynamically oriented psychotherapy and is making satisfactory progress. She has regained the lost memory of accidentally dropping the ring in the basket.

Summary

This case note demonstrates the use of unconscious mechanisms in the loss of a ring. The patient was able to start psychotherapy, having used the loss of the ring to provide her with a self-acceptable reason to see a psychiatrist for emotional difficulties of which she was previously only vaguely aware.

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[1] i.e., Mother—lulling, soothing, requesting cooperation; Father—firm, authoritative, commanding attitude of the therapist.

Massachusetts Society for Research in Psychiatry

Meeting of October 7, 1955

Daniel H. Funkenstein, M.D., President, Presiding

RECENT TRANQUILIZING AGENTS—THEIR USE IN PSYCHIATRY. 1. *Chlorpromazine in the Treatment of Psychotic Reactions.* MYER ASEKOFF, M.D.

Since October, 1954, 251 patients at the Metropolitan State Hospital, Waltham, Mass., have been treated with chlorpromazine, (178 females and 73 males). The types of psychoses were:

(1) Schizophrenia	142 cases
(2) Manic Depressive Reactions	31 cases
(3) Involutional Reactions	10 cases
(4) Chronic Brain Syndromes due to Cerebral Arteriosclerosis	65 cases
(5) Mental Deficiency with Psychotic Reaction	17 cases
(6) Chronic Brain Syndrome due to Miscellaneous Causes	19 cases
(7) Character Disorders	4 cases
Psychoneurosis	1 case
Paranoid States	2 cases

The criteria for treatment were disturbed behavior characterized by such symptoms as excitement, restlessness, overactivity, destructiveness, aggressiveness or self-mutilative or suicidal tendencies. The average duration of illness ranged from a few weeks to several years, the duration being greatest for the schizophrenic group. Dosage ranged from 75 mgms. to 1000 mgms. daily in divided doses with an average of 400 mgms. daily especially for the schizophrenic group. The length of treatment varied depending on the patient's response.

Results for the total group were as follows:

(1) Slight improvement	58 or 23%
(2) Moderate improvement	77 or 29%
(3) Marked improvement	40 or 16%
(4) Unimproved	78 or 31%
(5) Worse	2 or 1%

Fourteen of 24 manics showed either moderate or marked improvement. Sixty-eight out of 142 schizophrenics showed moderate or marked improvement. Five of the involutional reactions showed moderate or marked improvement as did 6 of the cerebral arteriosclerotics. Five of the mental defectives and eight of the chronic brain syndromes due to miscellaneous causes showed moderate or marked improvement. Estimation of improvement was arrived at by evaluation of the patients by the psychiatric staff and ward personnel. Chief complications were a ten per cent incidence of Parkinsonism, a 10 to 15 per cent incidence of skin reactions, 3 cases of jaundice, 4 cases of agranulocytosis; one patient with agranulocytosis died.

A concomitant control study with placebos was begun in July, 1955, during which 19 patients were given placebos for a two-week period and then placed on chlorpromazine. While on placebos only three patients showed slight improvement while the rest were unchanged. When given chlorpromazine one patient showed marked improvement, 5 showed moderate improvement and 4 showed slight improvement.

Chlorpromazine is a useful drug because of its tranquilizing effect resulting in either a moderate or marked degree of improvement in 45% of cases treated. Complications are usually not too serious except for hepatitis and agranulocytosis. It should only be given under careful medical supervision. It is not a panacea nor does it usually bring about a remission of psychotic symptomatology. However, because of its tranquilizing effect it permits the institution of other therapeutic procedures which may result in more permanent or prolonged improvement.

2. *Experience with Reserpine in Chronically Disturbed Psychiatric Patients.* PETER MCK. MIDDLETON, M.B.B.S., D.P.M.

Twenty-six of the most disturbed female patients in the Connecticut State Hospital were selected. All but three were chronic schizophrenics. Their mean age was 36 and average hospital stay 8 years, and all had received much treatment previously with little benefit. Nine had received lobotomies and eleven had had over 200 EST. In the ward culture obtaining, they all required either restraint or maintenance EST at frequent intervals, and none were considered able to use the congregate dining room.

The dose was 8 to 10 milligrams during the first month, thereafter 3 to 4 milligrams. It was given orally except for 12 hourly injections of 2.5 milligrams during the first ten days. Cost for the first month was $9.85 and thereafter 14 cents a day.

After three months five were home on extended visit, nine had week-end passes, only four still needed either restraint or EST from time to time, and all but one were eating in the congregate dining room.

To the direct effects of the drug there was soon added the influence of an improved ward milieu and attendant enthusiasm which was indirectly due to the drug and was certainly therapeutic.

The administration of this type of medicine demands no very special skills, no esoteric theoretical constructs and minimal emotional investment on the part of the therapist. For this reason such drugs are likely to find their proper place in psychiatry rather earlier than will some older methods whose very complexity induces inertia into the assessment of their limitations.

3. *A Controlled Study of the Effects of Chlorpromazine and Reserpine in Chronic Schizophrenic Patients.* HARRY FREEMAN, M.D., A. L. ARNOLD, M.D., AND H. S. CLINE, M.D.

The effects of chlorpromazine and of reserpine were studied in two groups of chronic schizophrenic patients at the Worcester State Hospital, Worcester, Mass., the first in male lobotomized subjects, the second in highly agitated females. The "double-blind" technic was utilized. Ten lobotomized men received chlorpromazine and another matched group of ten received placebos. Nine agitated women received reserpine and another matched group of ten received placebos. The patients' psychiatric status was determined weekly by means of a modified Malamud-Sands Rating Scale.

For the chlorpromazine group the mean rating scores for each group were quite similar until the dosage had been raised to 800 mg. daily. Thereafter, the chlorpromazine group showed an improvement in their scores over the next three weeks. Omission of the drug resulted in no change for three weeks and a reversion to the previous level or above it during the fourth week.

For the reserpine group, the mean rating scores for each group were quite similar until the dosage had been raised to 8 mg. daily. Thereafter, the reserpine group showed a slower but as striking an improvement in scoring over a ten-week period as did the chloropromazine group.

The effect of both drugs seems to be largely concentrated on the elements of increased socialization with decreased hostility and aggression. There did, however, seem to be some slight improvement in insight and a reduction in delusional content.

Discussion.—Leston L. Havens, M.D.: The experience of Drs. Walter Mann, Donald Jolly and myself, at the Boston Psychopathic Hospital, is in many respects similar to those of Drs. Asekoff and Middleton. We found thorazine useful in the ward management of acute excitements, particularly in the course of hypomanic reactions. Serpasil given over long periods to chronic schizophrenics has probably obviated the use of insulin or lobotomy in some cases.

In the careful study of Dr. Freeman and his associates we see some of the double-blind method's interests and perils. We do not see a single suggestion effect in the placebo groups but two, the course of each seeming to "imitate" the respective drug group curve, until a certain dosage level is reached. How dependent are placebo improvements on the particular accompanying drug given? We cannot call the early effects simply placebo effects but better placebo plus thorazine or placebo plus serpasil effects. It is also important to know that when high doses of these agents are used observers cannot be "blind" to what patients are receiving: the side effects, such as parkinsonian signs, identify the drug patients all too readily.

Samuel Bojar, M.D.: In listening to the reports of these very interesting studies I noticed, as I repeatedly have in the literature, the virtual unanimity of certain final conclusions regarding, (1) the type of symptom picture which seems to respond most favorably to reserpine and chlorpromazine, and (2) the fact that these drugs are not, contrary to the assumption of our non-psychiatric medical colleagues and non-medical contributors to ladies' magazines, the end-all of psychiatric illness. We are not yet out of business. These drugs are at best only adjuncts to other forms of psychiatric therapy, and in many cases, as we heard this evening, almost a necessity if the patient is to be brought to a state in which he or she is amenable to psychotherapy and capable of social contact with the environment.

I am particularly interested in the psycho-dynamic structure in which the several new "tranquilizing" drugs have their greatest and most beneficial effect. We have heard tonight that in Dr. Middleton's study, the patients were chosen because they were the twenty-six "most disturbed female patients who had been hospitalized at least a year." Dr. Asekoff's criterion was disturbed behaviour. Dr. Freeman and his co-workers used lobotomized males and agitated females. The reason for the lobotomy is not stated but heightened psycho-motor activity may possibly have been one of the reasons. This concensus is very much in line with the findings of others that these drugs are of greatest clinical value in psycho-pathologic states with psycho-motor excitement, agitation, and aggressiveness.

In the face of the accumulating evidence supporting this, the question arises as to why there is such difference in response among patients who may show this same behaviour pattern. It appears that we must pay some attention to the psycho-dynamic differences in these patients. I do not intend to discuss all the dynamics but would like to mention a few, especially those relating to the aggressiveness.

They may show similar aggressiveness but what does this aggressiveness represent in these various patients? We do know that often aggressiveness represents a break-through of strivings which have been suppressed in the need to submit to social demands. When such submissiveness is necessary for acceptance and approval, tranquilization is of value to the patient and it can readily be utilized, as we have seen, in the cases with increased socialization. On the other hand, it may be a defense against the threat of passivity, and a means of asserting the masculinity and potency which the passivity might tend to deny. In such a case we can hardly expect that the patient will calmly accept "tranquilization." I recently encountered just this problem when asked to see a previously successful businessman who, just two weeks before, had been placed on reserpine by his physician because of an agitated depression. He had begun to calm down in a gratifying manner and then became increasingly panicky. This could, I imagine, be interpreted as Kline's "turbulent" stage. From my later knowledge of this patient, however, I am more inclined to feel that this was a reaction of overwhelming anxiety when faced by the loss of what had been his major defense against passivity and submissiveness.

I have been able to find in their literature reports which would seem to confirm the occurrence of such a reaction, in patients with unconscious conflicts about their potency, be it sexual or intellectual, and who use activity as a means of self-reassurance. Cases have

also been reported in which some of the unfortunate side effects have been interpreted by the patients as impairment of, or damage to, their body image. These patients were said to have done poorly after these effects appeared.

While these reports have served to dampen some of the initial enthusiasm, I feel this has been healthy, for it is a step in the direction of the more selective use of the drugs. In my own experience, I have found the occasional negative reaction very helpful in that it has helped crystallize the psychodynamics of the particular case, and thus was very useful in the ensuing psychotherapy. It thus becomes rather clear that the most effective use of these drugs is the amelioration of the anxiety and over-activity which might interfere with the necessary psychotherapy.

WILLIAM MALAMUD, M.D.: I wish to express my thanks for the privilege of hearing these excellent papers and the very enlightening ideas that were contributed by the discussants who preceded me. Being the last of the discussants, I find myself in the rather complex setting of taking into account not only the papers that were presented, but also some of the statements that were made in the discussion.

May I first of all say that I was very much encouraged by the nature and quality of the work that was done by those who presented the papers. I find that they were able to maintain an objective attitude without being nihilistic and in view of some recent contributions to this particular subject, it is especially gratifying to have an appraisal based on actual experience and an impartial evaluation of the results. My own limited experience with the effects of these drugs in the treatment of mental diseases, is entirely in agreement with what I have heard tonight, in the sense that they represent a new method of treatment which, although it cannot be considered to be a panacea for all mental illness, adds to our therapeutic efforts new methods which certainly can be used as adjuvants and with further study may actually prove to contribute in some cases to treatment of a more fundamental kind.

Since some of the discussion was in direct reference to the quantitative methods used by Dr. Freeman and since he made use of the rating scale which my associates and I have developed at the Worcester State Hospital, I would like to say a few words in regard to this method. In the first place, we have paid a great deal of attention to the standardization of it, which included evaluation of its reliability. In a number of reports that we have published, we presented the manner in which we established the degree of reliability of the scale. Different raters observed the patient's behavior at the time of interviews, independently recorded their ratings, and persons well trained in statistical methods then computed the degree of correlation between these independent observers. It was found that this correlation was very high. After a series of such studies, we felt that the method was certainly reliable from that point of view.

As to the question of how profound, global, or comprehensive this rating is, it is well to remember that any quantitative method which is to be used in biological studies but particularly in relation to human behavior, must, of necessity, restrict itself to a certain number of phenomena that can be quantitatively evaluated. This scale is not intended to measure the total behavior and experience of the patient, and we will always have to supplement it by clinical evaluations of a general type. For the purpose, however, of presenting a quantitative evaluation of the clinical picture and its course so that it could be useful in correlating it with other measurable functions such as physiological, biochemical, or others, a scale of this type will have to be used. No one, and particularly none of those who have worked with this scale, are of the opinion that this quantitative device is perfect, and we are still continuing to search for revisions of the scale that will approach more nearly a satisfactory measuring device.

BOOK NOTES AND REVIEWS

Books received are acknowledged and given a brief description in this section. Selections serving a variety of interests will be made from these for a more extensive review, as far as space will allow.

BOOK NOTES

Jones, Ernest. THE LIFE AND WORK OF SIGMUND FREUD. Volume II, (1901–1919, Years of Maturity). New York: Basic Books, Inc. Pp. 512, Illustrated. 1955, $6.75.

This second volume of the three volume series maintains the excellency of the first volume which dealt with Freud's early life and formative period. The present book covers that most important period of Freud's 45th year to his 64th (1901–1919) the description of which is both a measure of Freud's genius and of Dr. Jones' skill as a biographer of front rank.

The author demonstrates his ability and intimate knowledge of the facts in describing the various personalities associated with the psychoanalytic movement in the early days when Freud's ideas met with active hostility, which in turn was responded to with plenty of heat and resistance. These early tensions and controversies among the pioneer workers still become activated to a certain extent from time to time owing to the particular nature of the specialty. Dr. Jones does not confuse personal with intellectual issues, which is very important in a biography dealing with methods and researches.

Freud repeatedly cautioned against expecting too much of psychoanalysis or of its practitioners, nevertheless they have vitalized the whole field of psychology in general and that of psychiatry in particular. At a time when most professional workers begin to let down, Freud was still in an exceptionally active phase of production. His life as he lived it, and as it is portrayed by Dr. Jones in well formulated word pictures, constitutes one of the best examples for young workers to contemplate. We now look forward with keen anticipation to the appearance of the next and last volume to complete the picture.

Hough, John H. SCIENTIFIC TERMINOLOGY. New York: Rinehart and Company, Inc., Pp. 231, 1953, $3.50.

This book by the Professor of Classics, University of Colorado, is the outgrowth of many years of teaching and contacts with a variety of students taking scientific courses. Here one finds discussions and illustrations of the process of linguistic and orthographic history which the student of biology and medicine will find invaluable.

Following an introductory section and one on the Greek and Latin alphabets, the next three sections deal with the formation of English scientific words with separate treatment of roots, stems, combining forms, suffixes, and prefixes. Other sections (there being twelve in all) present general scientific vocabularies, Latin forms and Latin grammar, medical and pathological, bacteriological and pharmaceutical terminology, biological terms and the Linnaean system of biological nomenclature and finally instruction in the reading and writing of Latin descriptions.

The text throughout is very well organized and clearly presented. Certainly every college student should have it at hand and high school students contemplating a scientific career would do well to own a copy. The majority of mature scientists could be instructed by studying certain parts of the book, thereby improving the terminology of their manuscripts.

Mahoudeau, Daniel. LES TRAUMATISMES DE LA MOELLE EPINIERE. Paris: Masson et Cie, Editeurs. Pp. 196: 33 figures: 1952.

This well-written and adequately illustrated monograph presented in nine sections gives a comprehensive survey of the problems indicated by the topic. Beginning with the history of the interest in spinal cord accidents

the subject is developed in terms of the kinds of trauma, sites of lesions, frequence and the pathogenesis of compression, contusion, and commotion. In the parts on anatomopathology and physiological pathology, one finds comprehensive accounts of the various primary and secondary lesions produced by traumatism. Spinal shock, disorders of the reflexes, muscle tone, bladder and genital dysfunctions, neurovegetative and metabolic disorders are well described.

The clinical parts emphasize the different phases or stages of the development of the various syndromes, with all the forms of traumatism sites of lesions and primary and delayed reactions to injury. Diagnostic signs and methods, and prognosis both vital and functional are reviewed. The therapeutic section contains general principles, and special applications of selected procedures when indicated by disorders of the bowels, nutritive deficiencies, etc. Orthopedic aids, surgical indications, physiotherapy, motor re-education, and therapy of sequelae are discussed.

There are seventeen pages of references to the literature, the list being separated into two parts. One part is composed of references to contributions made prior to 1939; the other of those appearing since that date. It is an informative monograph for all in the field of neurology who read the French language.

Book Reviews

Misiak, Henryk and Staudt, Virginia M. CATHOLICS IN PSYCHOLOGY: A HISTORICAL SURVEY. Foreword by Edwin G. Boring. (New York: McGraw-Hill Book Co., 1954. Pp. xv + 309. $5.00.)

This book has two main purposes: a negative one and a positive one. The negative objective consists in disproving that practicing Catholics reject or are expected to reject the evidence of their factual observations and experimental investigations if these seem incompatible with the teachings of the Church. Edwin Boring of Harvard University expresses it succinctly in his wise foreword on Science and Faith: "The Church itself—although that does not mean every individual within the Church—accepts inference based on controlled observations as a valid guide to truth, and for the most part the Church's dogmas are not concerned with those theories that count as facts of science. Faith is the evidence of things unseen; it differs from science in being concerned with the unobservable." Misiak and Staudt make the point that there is no Catholic psychology just as there is no Catholic biology, medicine, or physics. They add that bias and prejudice can be found in religion as well as in science, but the fault lies not with religion or science but with individuals. Psychology as a science began in the XIXth century when the widespread conviction prevailed that a scientific attitude and an active belief in religion are inconsistent. Many Catholics attacked the new psychological science because some of its outstanding leaders had no religion.

The positive purpose of the book is to describe the efforts and scientific contributions of more than a score of prominent Catholic psychologists, to illustrate the diversity of their interests, methods, and theories. It is this group of psychologists (not all of them priests) whom Misiak and Staudt call pioneers because they overcome the initial Catholic opposition to experimental psychology. Behaviorism and psychoanalysis were initially unqualifiedly opposed by Catholics because of the blunt materialistic theory of behaviorism and the anti-religious attitude of psychoanalysis. Gradually, however, a distinction was made between experimental methods of investigation and theoretical postulates and deductions. Theories do not always match the facts and methodological procedures. It is therefore possible to use behavioristic and psychoanalytic procedures of investigations without having to accept all of these movements' theories, especially generalizations which go far beyond relevant experimental evidence. The historical information contained in this book is an im-

portant chapter of the history of experimental psychology in the Western world.

This volume was written to provide supplementary reading in the history of psychology and of psychological systems. It is intended primarily for students in Catholic colleges and universities but can be read profitably by non-Catholics interested in the relation between scientific psychology and Catholic faith. It corrects a great many misunderstandings and fulfills its purpose admirably.

Z. A. PIOTROWSKI

Bornemisza, Stephen Th. THE UNIFIED SYSTEM CONCEPT OF NATURE. College Edition. (New York: Vantage Press, Inc., 1955. Pp. viii + 137. $3.00.)

This small volume has been written primarily for theorists but it can benefit also those who have not been trained in modern physics and wonder whether the physicists employ some concepts and principles unknown to biologists and psychologists. It is a reassuring book to workers in the field of biology (including psychology and psychiatry) who may have worried that the fundamental theoretical structures of the physical and biological sciences are gradually becoming dissimilar and that the physicists have outstripped the biologists in conceptual thinking. The author, a physicist with strong and active interests in pathology and psychology, has attempted to unify logically the basic concepts of physics and biology and to reconcile causality (or regular recurrence) with randomness (or uniqueness, chance, indeterminateness). The unification, incomplete but quite successful on the whole, has been achieved with the aid of the concepts of energy and entropy, and laws governing the transformation of energy. Dissipation of energy is viewed as equivalent to relaxation of tension or entropy increase. Impulses are said to aim at an increase of entropy. The following samples illustrate some of the author's reasoning: "Atoms and molecules possess the faculty of autonomous regeneration: if an electron is forcibly ejected from its respective group, the atom or the molecule will always try to replenish itself . . . We can well 'visualize' atoms and molecules as representing 'organisms' on another level of evolution . . . Life, in the widest sense of the concept, has no limits in the direction of the infinitesimal."

The author educated at the University of Zurich, Switzerland, invented a number of physical instruments, among them a gravity meter, an intricate device to measure variations of the earth's gravitational field. Although primarily a geophysicist, he published two books on the explanation and essence of life. The present volume is a condensed and revised edition of the fruits of his theoretical thinking. This little and lucidly written book contains no mathematical formulae and can be read easily even by those who are not familiar with theoretical treatises. Its subject matter is far from popular but the exposition is popular in the best meaning of the word. Concerned with the basic unifying concepts, it does not discuss the differences between the biological and physical sciences. To read the book and think it through will undoubtedly be a stimulating intellectual adventure for any person who wants to keep abreast of many new and fundamental ideas of our time. One need not agree with the author on every point to gain much from his work.

ZYGMUNT A. PIOTROWSKI

Raab, Wilhelm. HORMONAL AND NEUROGENIC CARDIOVASCULAR DISORDERS (Endocrine and Neuroendocrine Factors in Pathogenesis and Treatment). Baltimore: The Williams & Wilkins Company, Pp. xxi + 722: 86 Figures. 1953. $15.00.

This is a unique thought stimulating book bringing ideas together in a way not readily found elsewhere, if at all. Its purpose is "to convince cardiologists and other physicians that neuroendocrine and endocrine influences play a fundamental and decisive part in the origin and therapeutic amenability of many cardiovascular disorders and that it is necessary to incorporate the established results and concepts of contemporary neuroendocrinology and endocrinology into everyday clinical thinking and acting."

The subject matter is presented in three main sections:

I. Experimental cardiovascular effects of hormones and neurohormones. This part

should be of particular interest as a source of information concerning experimental evidence of the relationship between hormones and cardiovascular structure and function.

II. Cardiovascular features in endocrine and neuroendocrine syndromes. This part should be of interest to the internist and clinical endocrinologist.

III. Endocrine and neuroendocrine factors in cardiovascular syndromes; a section for the particular attention of the cardiologist and the general practitioner. The physiologist and biochemist will find many problems to think about in all three sections.

Dr. Raab is now Professor of Experimental Medicine and Head of Cardiovascular Research Unit of the University of Vermont. During the last thirty years he has published a large number of papers in his field, and the present book with its comprehensive scope was truly a tremendous task of production.

The text ends with a synopsis and summary with interpretations and speculative working hypotheses which will serve well for future research. Following these are a list of 3,726 references to the literature arranged alphabetically and covering about 186 pages, and an adequate subject index. It is an excellent job of bookmaking, the paper, printing, illustrations, and binding being of prime quality. Practitioners, specialists in internal medicine, and research workers in the laboratory will find it a useful condensation of much investigation and experience from many areas.

BOOKS RECEIVED FOR REVIEW

SEPTEMBER, 1955

BORNEMISZA, STEPHEN TH. *The Unified System Concept of Nature.* Vantage Press, Inc., New York, N. Y.

DARWIN, CHARLES. *The Expression of the Emotions in Man and Animals.* Philosophical Library, Inc., New York, N. Y.

KRIEG, WENDELL, J.S. *Brain Mechanisms in Diachrome.* Brain Books, Evanston, Ill.

WILLIAMS, ROBERT H. (Ed.) *Textbook of Endocrinology,* Second Edition. W. B. Saunders Co., Philadelphia, Pa.

NOTES AND NEWS

EXHIBITION OF FREUD PUBLICATIONS

The New York State Psychiatric Institute, 722 West 168th Street, New York City, will exhibit a portion of the material held in the Freud Memorial Room of its Library. This exhibition will open on January 16, 1956 and continue through February 10, 1956. This is the first of such exhibitions which will be held by various institutions during 1956, the centenary of the birth of Sigmund Freud.

The exhibition will include copies of the early neurological publications of Freud, copies of the first publications in the field of Psychoanalysis, several holograph manuscripts by Freud, several of Freud's books with their translations into 14 different languages, books inscribed by Freud and books inscribed to Freud, letters written by Freud, documents signed by Freud which relate to the Viennese Psychoanalytic Society, and a collection of photographs of Freud. All of the material to be exhibited is the property of the Library of the Psychiatric Institute which holds a considerable part of Freud's original library.

Dr. Jackson A. Smith, formerly assistant professor of psychiatry at Harvard Medical School and at Baylor University College of Medicine, Houston, Texas, has been appointed director of research at the Nebraska Psychiatric Institute, and professor of neurology and psychiatry at the University of Nebraska, at Omaha.

DR. DAVIS RETIRES

John Eisele Davis, Sc.D., pioneer in the development of recreation for the treatment of mental patients, will retire from Veterans Administration September 30, 1955, after 35 years of Government service.

Scientist, author, teacher and athlete, Dr. Davis leaves VA Central Office in Washington, D. C., at the age of 60 for an active life of writing, teaching and lecturing.

The first book on recreational therapy published in this country was written by Dr. Davis in collaboration with Dr. William Rush Dunton, associate professor of psychiatry at Johns Hopkins Medical School. The book appeared in 1933.

Altogether, Dr. Davis is the author of five books and several manuals on the subject of medical rehabilitation, corrective therapy, and recreational therapy as psychotherapeutic-activity approaches. He also has written more than 100 articles, both technical and popular.

TRAINING IN CHILD PSYCHIATRY

Specialized training in child psychiatry is available in a number of member clinics of The American Association of Psychiatric Clinics for Children which have been approved as training centers by the Association. *The training begins at a third-year, postgraduate level with minimum prerequisites of graduation from an approved medical school, an approved general or rotating internship, and a two-year residency in psychiatry, approved by the American Board of Psychiatry and Neurology.* The majority of these clinics have also been approved individually by the American Board of Psychiatry and Neurology for a third year of training and for an additional year of experience.

This training is in preparation for specialization in child psychiatry, and especially for positions in community clinics devoted wholly or in part to the out-patient treatment of children with psychiatric problems. At the completion of training, attractive openings are available in all parts of the country. Fellows receive instruction in therapeutic techniques with children in out-patient settings which utilize the integrated services of the psychiatric clinic team. Most of the clinics have a two-year training period although a few will consider giving one-year training in special cases.

Fellowship stipends are usually in line with U. S. Public Health Service Standards, that is, approximately $3,600 as these stipends come

mainly from the Public Health Service. Stipends sometimes are paid by state departments of mental health, the individual clinics, and occasionally communities paying for the training of psychiatrists engaging to work in these communities at the end of their training. Special arrangements may be made occasionally to supplement the stipends by taking on other responsibilities locally (e.g. part-time work with the V.A., consultation to social agencies, etc.). A limited number of training centers can offer higher stipends.

The office of The American Association of Psychiatric Clinics for Children acts as a clearing house for applicants. Application may be made through this office or directly to the individual clinics. In all cases, acceptance of applicants for training is by the individual training centers.

For further information and for application forms, write to:

Miss Marion A. Wagner, Administrative Assistant
American Association of Psychiatric Clinics for Children
1790 Broadway, Room 916
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CERTIFIED BY THE AMERICAN BOARD OF PSYCHIATRY AND NEUROLOGY, INC.

San Francisco, California

OCTOBER, 1955

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YALE ALCOHOL STUDIES

The Yale Summer School of Alcohol Studies will hold its fourteenth annual session, in 1956, during the 4-week period July 1 to July 26 inclusive.

The School is organized to meet the needs of a number of categories of professional and non-professional people. Professional workers presently active in prevention or treatment of alcoholism, e.g., clergy, educators, physicians, case workers, psychologists, will have an opportunity to exchange experiences, review current literature and practices and re-define some of the principles they observe in practice. Enforcement and correctional officers, leaders in municipal and state affairs, traffic supervisors, personnel officers and foremen in industry, and others whose work requires a knowledge of alcohol problems will acquire a background of understanding of these questions through attendance at the School. Private citizens who wish to explore problems of alcohol as they are related to community life and social change will find their experiences at the School stimulating and challenging.

THE CURRICULUM

The 1956 session, through a series of lectures and seminars, offers a systematic investigation of various aspects of the functions and problems of alcohol as they affect the individual and society. The program is organized around a number of major topical areas.

A prospectus describing the course in detail will be mailed on request. Write to:

Registrar
SUMMER SCHOOL OF ALCOHOL STUDIES
52 Hillhouse Avenue, Yale Station
New Haven, Conn.

The sixth lecture in the Sixth Annual North Shore Health Resort Lecture Series on PSYCHIATRIC PROBLEMS IN MEDICAL PRACTICE will be held at our hospital, 225 Sheridan Road in Winnetka, Illinois on Wednesday, March 7, 1956 at 8:00 P.M. THE MANAGEMENT OF THE MULTIPLE COMPLAINER will be discussed by GEORGE C. HAM, M.D., Professor and Chairman, Department of Psychiatry, University of North Carolina, School of Medicine; Chief of Service, North Carolina Memorial Hospital, Chapel Hill, North Carolina. Dr. Ham has agreed to answer questions after his presentation.

The Commission on Education of the American Academy of General Practice has approved these lectures for informal credit. The J. B. Lippincott Company of Philadelphia will publish the entire series as a book. All

* Denotes Supplementary Certification

royalties that will accrue have been assigned to the American Psychiatric Association.

All physicians are cordially invited to attend these lectures which are presented as a public service to the medical profession.

At the meeting of the American Academy for Cerebral Palsy, Memphis, Tennessee, October 10th, 11th and 12th, the following officers were elected for the forthcoming year:

Dr. Margaret Jones, President
University of California Medical Center
Los Angeles, California
Dr. Nicholson J. Eastman, President-Elect
Johns Hopkins Hospital
Baltimore, Maryland
Dr. Robert A. Knight, Secretary-Treasurer
869 Madison Avenue
Memphis, Tennessee

The 1956 meeting will be held in Chicago; the 1957 meeting will be held in New Orleans

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NEW YORK STATE HOSPITAL CLINICS

The opening of the third of four centralized clinics designed to provide aftercare for mental patients from the New York City area has been announced by Dr. Paul H. Hoch, New York State Commissioner of Mental Hygiene. The new clinic is located at 150–11 Hillside Avenue, Jamaica, Long Island.

The clinics are operated under the department's reorganized aftercare clinic program which provides psychiatric and social services to patients on convalescent care from state mental institutions residing in the metropolitan area. The other clinics are located at 105 Schermerhorn St., Brooklyn, and 1910 Arthur Ave., Bronx. An existing clinic in Manhattan is to be expanded and converted to the new system at a later date, Dr. Hoch declared.

Dr. Eugene B. F. Riley, formerly supervising psychiatrist at Creedmoor State Hospital, is psychiatrist in charge at the Queens clinic and Josephine V. Cooper, also assigned from the Creedmoor staff, is supervisor of psychiatric social work. Psychiatric services are supplied by psychiatrists from the state hospitals and schools in the metropolitan area. Other staff members will include two senior psychiatric social workers, 11 psychiatric social workers, and seven clerical workers.

At the present time, the clinic services are available only to patients released from Creedmoor State Hospital since September 1, 1955, Dr. Hoch said. The program will be expanded as professional workers are available and later will provide treatment services for all persons residing in Queens County who have had psychiatric treatment in the department's institutions.

The reorganization of the aftercare services in the metropolitan area was undertaken to prevent duplication of services and to make more effective use of the services of psychiatric social workers, Dr. Hoch explained. The new aftercare clinics replace those formerly conducted by individual state institutions. All patients released from state mental institutions are placed on convalescent care for periodic follow-up until they are ready for final discharge.

Eleven state mental institutions, eight hospitals and three schools mainly release patients on convalescent care in the New York City area. The state hospitals serving the metropolitan area include Brooklyn, Central Islip, Creedmoor, Harlem Valley, Kings Park, Manhattan, Pilgrim and Rockland. The state schools are Letchworth Village, Wassaic and Willowbrook. Upstate mental institutions also have a few patients on convalescent care in the area.

Dr. Donald M. Carmichael is director of the department's aftercare program.